

1999 ~ 2001

UNIVERSITY OF MEMPHIS
UNIVERSITY OF MEMPHIS
MEMPHIS, TN 38152

graduate issue

The **Bulletin of The University of Memphis** is composed of the following publications: *Undergraduate Issue*, *Graduate Issue*, *Cecil C. Humphreys School of Law Issue*, and *Student Handbook Issue*. All of these publications have been designed to provide current and prospective students, faculty, and staff with a comprehensive description of the University and its academic programs, regulations, services, and activities. Recommendations concerning these publications should be addressed to the Director of Curriculum Planning in the Office of Academic Affairs. A brief description of each publication follows: The *Undergraduate Issue* contains a detailed description of undergraduate curriculum, admission information, requirements for graduation, and academic regulations. The inside front cover of this publication includes policy pertaining to degree requirements. Because students may graduate using the degree requirements from any valid catalog beginning with the year in which they were first admitted to undergraduate study, the issue received upon admission should be retained by the student.

The *Graduate Issue* contains a description of the University, graduate program requirements, and Graduate School regulations. Admission requirements and information pertaining to fees are also included.

The *Cecil C. Humphreys School of Law Issue* contains a description of the degree requirements, admission requirements, fees, and activities of the School of Law. An application form is also provided.

The *Student Handbook Issue* provides new students with a brief description of student activities, campus services, policies and procedures related to Student Affairs, and the Code of Conduct. Each entering student receives a copy of this publication and is responsible for becoming familiar with the Code of Conduct and the policies and procedures.

The *Schedule of Classes* (Fall, Spring, and Summer) is an official extension of the *Bulletin* and is published prior to each academic term (Fall, Spring, and Summer). It contains a detailed outline of the registration procedure, individual course offerings (course, time, days, location, and instructor), and course or program revisions made since the publication of the most recent *Undergraduate Issue* and *Graduate Issue*. It is an official extension of this *Bulletin*. The Academic Calendar listing all deadlines is included in each issue of the *Bulletin* and in the *Schedule of Classes*. The Registration Calendar is found in the *Schedule of Classes*.

Directory for Correspondence

Visit the Graduate School's website at: <http://www.people.memphis.edu/~gradsch>

Inquiries will receive attention if addressed to the administrative offices below at

The University of Memphis, Memphis, Tennessee 38152

Admission	Graduate Admissions (901) 678-2811
Assistantships and Fellowships	Chair or coordinator of graduate studies of appropriate department
Degree Requirements	Chair of appropriate department or Dean of the Graduate School (901) 678-2531
Entrance Examinations	Testing Center (901) 678-2428
Financial Aid	Graduate Student Financial Aid (901) 678-4958
Graduate Studies	Chair or coordinator of graduate studies of appropriate department or director of graduate programs in appropriate college
Disabled Student Services	Student Disability Services (901) 678-2880
Housing	Residence Life (901) 678-2295
Institutes	Chair of appropriate department
Publications	Office of Media Relations (901) 678-2609
Registration	Registrar (901) 678-2671
Research and Grants	Vice Provost for Research (901) 678-2590
Testing arrangements	Testing Center (901) 678-2428
Transcripts	Records (901) 678-3927
Veterans Services	Veterans Services (901) 678-2996
Vice Provost for Research and Dean of the Graduate School	308 Administration Building (901) 678-2590
Associate Dean of the Graduate School	317 Administration Building (901) 678-2531
President of the University	341 Administration Building (901) 678-2234

Bulletin of The University of Memphis (USPS 779-380) Periodical postage paid at Memphis, Tennessee 38152

POSTMASTER: Send address changes to Bulletin of The University of Memphis, Memphis, Tennessee 38152.

Volume 87, Number 4—**Graduate Issue**

July 1999

Published four times yearly—April, May, June, July—by The University of Memphis.

For students whose initial enrollment occurs Fall 1999–Summer 2000, this issue of the *Bulletin* is valid through Summer 2006; for those whose enrollment occurs Fall 2000–Summer 2001, the validity period ends Summer 2007.

The University reserves the right to cancel or alter any part of this bulletin without notice (subject to the following):

The course offerings of The University of Memphis are continually under examination and revision. This bulletin presents the offerings and requirements in effect at the time of publication, but is no guarantee that they will not be changed or revoked. The specific courses or activities constituting the degree requirements for any program are subject to substitution at any time prior to completion by the student. This bulletin is not intended to state contractual terms and does not constitute a contract between the student and The University of Memphis.

The University of Memphis reserves the right to make changes as required in course offerings, curricula, academic policies, and other rules and regulations affecting students to be effective whenever determined by the institution. These changes will govern current and formerly enrolled students. Enrollment of all students is subject to these conditions. Current information may be obtained from the offices listed above. Any fees, charges, or costs, and all academic regulations set forth

in this bulletin are subject to change at any time. All courses, programs, and activities described in this bulletin are subject to cancellation or termination by The University of Memphis or the Tennessee Board of Regents at any time.

The University of Memphis provides the opportunity for students to increase their knowledge by providing programs of instruction in the various disciplines and programs through faculty who, in the opinion of the institution, are trained and qualified for teaching at the college level. However, the acquisition of knowledge by any student is contingent upon the student's desire and ability to learn and the application of appropriate study techniques to any course or program. Thus, The University of Memphis must necessarily limit representation of student preparedness in any field of study to that competency demonstrated at that specific point in time at which appropriate academic measurements were taken to certify course or program completion. (TBR 2:04:00:01)

bulletin *of* The University of Memphis graduate issue

1999 ~ 2001

V. Lane Rawlins, Ph.D. **President**

Thomas G. Carpenter, Ph.D. **President Emeritus**

The eighty-seventh session will open August 26, 1999

The University of Memphis offers equal educational opportunity to all persons without regard to race, religion, sex, creed, color, national origin or disability. The University does not discriminate on these bases in recruitment and admission of students or in the operation of its programs and activities, as specified by federal laws and regulations. The designated coordinators for University compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 are the Vice President for Student Affairs and the Equal Opportunity Compliance Officer. Information in this document will be provided in alternative format upon request.

The University of Memphis is an Equal Opportunity/Affirmative Action University. It is committed to education of a non-racially identifiable student body.

The University of Memphis is one of 46 institutions in the Tennessee Board of Regents System, the seventh largest system of higher education in the nation. The TBR is the governing board for this system, which comprises six universities, 14 community colleges and 26 area technology centers. The TBR system enrolls more than 80 percent of all Tennessee students attending public institutions of higher education.

The University of Memphis is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor's, first professional, master's, educational specialist's, and doctoral degrees.

Contents

UNIVERSITY CALENDARS FOR 1999-2001	4	3. EXPENSES	25
1. THE GRADUATE SCHOOL	6	Fees and Charges, Application and Registration Fee Information, Refund of Registration Fees, Other Fee Information, Student Housing, Miscellaneous Fees, Appeal Procedures, University ID Cards, TIGER FUND\$, Residency Classification	
Mission of the University, Statement of Values, History, Governing, Body, Organization			
The Memphis Community	7	4. DEGREE PROGRAMS AND COURSES	30
Research Facilities	7	College of Arts and Sciences	30
Academic Services	10	Anthropology, Biology, Chemistry, Criminology and Criminal Justice, English, Foreign Languages and Literatures, Geography and Planning, Geological Sciences, History, Mathematical Sciences, Microbiology and Molecular Cell Sciences, Philosophy, Physics, Political Science, Psychology, Sociology and Social Work	
Cecil C. Humphreys School of Law	12	Fogelman College of Business and Economics	81
2. ADMISSIONS AND REGULATIONS	13	Accountancy, Business Administration; Decision Sciences; Economics; Finance; Insurance, Real Estate, and Business Legal Studies; Management; Management Information Systems; Marketing	
Admission to the Graduate School	13	College of Communication and Fine Arts	99
Master's Degree Programs, Education Specialist, Doctoral Degree Programs, Conditional Admission, Readmission, International Students, Non-Degree Status		Art, Communication, Journalism, Music, Theatre and Dance	
Miscellaneous Information	15	College of Education	119
Academic Regulations	16	Consumer Science and Education; Counseling, Educational Psychology and Research; Human Movement Sciences and Education; Instruction and Curriculum Leadership; Leadership	
Course Numbering System, Course Load Limitations, Change of Major, Adding and Dropping Courses, Audit Courses, Withdrawal, Attendance, Grading System, Credit by Examination, Course Validation, Transfer Credit, Academic Misconduct, Academic Probation, Graduate Faculty, Privacy Act, Appeals Procedures, Expiration of Catalog		Herff College of Engineering	150
Minimum Degree Requirements	20	Biomedical Engineering, Civil Engineering, Electrical Engineering, Engineering Technology, Industrial and Systems Engineering, Mechanical Engineering	
Graduate Academic Programs	20	School of Audiology & Speech-Language Pathology	166
Minimum Requirements for Master's Degree	20	University College	171
Course Requirements, Additional Program Requirements, Time Limitation, Thesis Requirement, Continuous Enrollment, Thesis Credit, Admission to Candidacy, Comprehensive Examination, Second Master's Degree, Education Specialist		School of Nursing, University Libraries	171
Minimum Requirements for Doctoral Degrees	22	5. UNIVERSITY ADMINISTRATION	172
Course Requirements, Additional Program Requirements, Time Limitation, Residency Requirement, Qualifying Examination, Advisory Committee, Comprehensive Examination, Dissertation, Continuous Enrollment, Dissertation Credit, Admission to Candidacy, Defense of Dissertation		INDEX	175
Graduate Assistantships	23		
Graduate Fellowships	23		
Graduate Student Association	24		

1999-2000 University Calendar

The calendar is subject to change at any time prior to or during an academic term due to emergencies or causes beyond the reasonable control of the institution, including severe weather, loss of utility services, or orders by federal or state agencies. (TBR 2:04:00:01)

FALL SEMESTER 1999

Registration dates to be announced.

For detailed dates and times, see the *Schedule of Classes*.

FULL SESSION

AUGUST 26: New university faculty orientation

AUGUST 27: Meeting of entire university faculty

AUGUST 30: Classes begin

SEPTEMBER 6: Holiday—Labor Day

OCTOBER 9-12: Fall Break

OCTOBER 19: Last day to drop courses or withdraw from the university

NOVEMBER 15: Last day for removing summer session "Incomplete" grades

NOVEMBER 25-28: Holiday—Thanksgiving

DECEMBER 8: Classes end

DECEMBER 9: Study Day

DECEMBER 10-16: Final examinations

DECEMBER 18: Commencement

FIRST SESSION

AUGUST 30: Classes begin

SEPTEMBER 23: Last day to drop first session courses

OCTOBER 20: Last day of classes and examinations

SECOND SESSION

OCTOBER 21: Classes begin

NOVEMBER 12: Last day to drop second session courses

DECEMBER 8: Last day of classes and examinations

SPRING SEMESTER 2000

Registration dates to be announced.

For detailed dates and times, see the *Schedule of Classes*.

FULL SESSION

JANUARY 17: Holiday—Martin Luther King's Birthday

JANUARY 18: Classes begin

MARCH 3: Last day to drop courses or withdraw from the university

MARCH 13-19: Spring break

MARCH 21: Last day for removing fall "Incomplete" grades

APRIL 26: Classes end

APRIL 27: Study Day

April 28-MAY 4: Final examinations

MAY 5: Commencement

FIRST SESSION

JANUARY 18: Classes begin

MARCH 5: Last day of classes and examinations

SECOND SESSION

MARCH 6: Classes begin

APRIL 26: Last day of classes and examinations

SUMMER TERM 2000

Registration dates to be announced.

For detailed dates and times, see the *Schedule of Classes*.

PRE SESSION

MAY 15: Classes begin

MAY 29: Holiday—Memorial Day

JUNE 1: Last day of classes

JUNE 2: Final examinations

FIRST SESSION

JUNE 5: Classes begin

JULY 4: Holiday—Independence Day

JULY 6: First session classes end

JULY 7: First session final examinations

SECOND SESSION

JULY 11: Second session classes begin

AUGUST 10: Second session classes end

AUGUST 11: Second session final examinations

FULL SUMMER SESSION

JUNE 5: Classes begin

JULY 4: Holiday—Independence Day

JULY 10: Last day to drop full summer session courses or withdraw from the university

AUGUST 3: Last day for removing spring semester "Incomplete" grades

AUGUST 10: Full summer session classes end

AUGUST 11: Full summer session final examinations

AUGUST 13: Commencement

IMPORTANT DATES FOR DEGREE CANDIDATES

LAST DAY FOR:

Filing Intent to Graduate Card with the Graduate School:

Filing Application for Master's and Doctoral Candidacy Form:

Submission of defended thesis or dissertation to Graduate School for review:

Final submission of thesis, dissertation, and comprehensive examination results to Graduate School:

COMMENCEMENT DATES, 1999-2000

December 18, 1999	May 5, 2000	August 13, 2000
September 3	January 21	June 9
September 3	January 21	June 9
November 19	April 14	July 19
December 3	April 28	July 28

2000-2001 Tentative Calendar

This calendar is tentative. For changes and/or deletions students should check the *Schedule of Classes* or the web at www.enrollment.memphis.edu/registrar/calendars/default.html

FALL SEMESTER 2000

Registration dates to be announced.

For detailed dates and times, see the *Schedule of Classes*.

FULL SESSION

AUGUST 28: Classes begin
 SEPTEMBER 4: Holiday—Labor Day
 OCTOBER 7-10: Fall Break
 NOVEMBER 23-26: Holiday—Thanksgiving
 DECEMBER 6: Classes end
 DECEMBER 7: Study Day
 DECEMBER 8-14: Final examinations
 DECEMBER 16: Commencement

FIRST SESSION

AUGUST 28: Classes begin
 OCTOBER 18: Last day of classes and examinations

SECOND SESSION

OCTOBER 19: Classes begin
 DECEMBER 8: Last day of classes and examinations

SPRING SEMESTER 2001

Registration dates to be announced.

For detailed dates and times, see the *Schedule of Classes*.

FULL SESSION

JANUARY 15: Holiday—Martin Luther King's Birthday
 JANUARY 16: Classes begin
 MARCH 12-18: Spring break
 APRIL 25: Classes end
 APRIL 26: Study Day
 APRIL 27-MAY 3: Final examinations
 MAY 4: Commencement

FIRST SESSION

JANUARY 16: Classes begin
 MARCH 4: Last day of classes and examinations

SECOND SESSION

MARCH 5: Classes begin
 APRIL 25: Last day of classes and examinations

SUMMER TERM 2001

Registration dates to be announced.

For detailed dates and times, see the *Schedule of Classes*.

PRE SESSION

MAY 14: Classes begin
 MAY 28: Holiday—Memorial Day
 MAY 31: Last day of classes
 JUNE 1: Final examinations

FIRST SESSION

JUNE 4: Classes begin.
 JULY 4: Holiday—Independence Day
 JULY 5: First session classes end
 JULY 6: First session final examinations

SECOND SESSION

JULY 10: Second summer session classes begin
 AUGUST 9: Second session classes end
 AUGUST 10: Second session final examinations

FULL SESSION

JUNE 4: Classes begin
 JULY 4: Holiday—Independence Day
 AUGUST 9: Full session classes end
 AUGUST 10: Full session final examinations
 AUGUST 12: Commencement

- **Dead Week.** Definition: The four day period preceding final examinations. No student social or athletic functions shall be scheduled during Dead Week.
- **Study Day.** Definition: The day prior to final examinations during most regular semesters. No academic activities shall be scheduled on Study Day. No study or review sessions which the student may feel obligated to attend may be scheduled.
- **Final Examination Period.** No examination shall be given at a time other than the scheduled time except with written permission from the department chair and the college dean. No social or athletic functions shall be scheduled during the Final Examination Period.

Intercollegiate athletics are exempt from the above policies.

Visit our Website at: <http://www.people.memphis.edu/~gradsch/>

Our homepage contains useful information about The University of Memphis and its Graduate School as well as links to area resources.

This two-year issue of the Graduate Catalog is valid until Summer 2006 for students entering in Fall 1999.
 It is valid until Summer 2007 for students entering in Fall 2000.

1. The Graduate School

LINDA L. BRINKLEY, PH.D.,
*Vice Provost for Research
 and
 Dean of the Graduate School*

DIANNE D. HORGAN, Ph.D.,
*Associate Dean of the
 Graduate School
 317 Administration Building
 (901) 678-2531*

ANN W. WILKS-PENROD, Ed.D.,
*Assistant Vice Provost for
 Research and the Graduate School
 308 Administration Building
 (901) 678-2590*

Visit our Website at: <http://www.people.memphis.edu/~gradsch/>

The Graduate School of The University of Memphis is the center of advanced study and research within the University. The basic objectives of the Graduate School are:

1. to preserve and disseminate knowledge;
2. to extend knowledge through research; and
3. to prepare men and women to assume responsible and useful roles in a changing society.

The Doctor of Philosophy degree is awarded in audiology and speech-language pathology, biology, business, chemistry, counseling psychology, educational psychology and research, engineering, geophysics, history, mathematics, music, philosophy, and psychology. The degrees of Doctor of Education and Doctor of Musical Arts are awarded by the College of Education and the College of Communication and Fine Arts, respectively. The College of Education also awards the degree of Education Specialist with a major in education. The Cecil C. Humphreys School of Law awards the Juris Doctor degree.

Master's programs are offered in forty-five major areas through six colleges and one school. The degrees include Master of Science, Master of Arts, Master of Fine Arts, Master of Arts in Liberal Studies, Master of Arts in Teaching, Master of Business Administration, Master of Music, Master of City and Regional Planning, Master of Public Administration, and Master of Health Administration.

Mission of the University

The University of Memphis is a member of the State University and Community College System of Tennessee and is governed by the Tennessee Board of Regents. As an urban university, The University of Memphis provides a stimulating academic environment for its students, including an innovative undergraduate education and excellence in selected research areas and graduate programs. The academic environment extends beyond the campus boundaries to encompass the entire community.

Education is enhanced through exposure to diversity in the composition of the student body, faculty, staff, and administrators, including women, minorities, individuals with disabilities, and various age groups and religions. The University has responded to the challenging responsibility of being located in a culturally diverse region by developing a unique blend of teaching, research, and service that contributes to the growth of the Mid-South region.

The University of Memphis asserts that excellence in teaching traditional and non-traditional students is its central responsibility. A comprehensive undergraduate education, grounded in the arts and sciences, develops intellectual, cultural, and ethical qualities in its students. The innovative General Education Program challenges students to develop

the analytical and critical skills necessary for life-long learning. The University of Memphis awards master's and doctoral degrees in selected graduate programs as well as degrees in the major professional areas. Through learning begun at The University of Memphis, graduates compete in the global intellectual community in which they live.

As a research university, The University of Memphis develops, integrates, disseminates, and applies knowledge. Faculty maintain ongoing programs of basic and applied research or creative activities appropriate to their disciplines. The University's urban environment provides a rich opportunity for research and creative scholarship, and for the use of that scholarship in the intellectual and cultural development of the region. The University's commitment to fostering a research and creative environment harmonizes with the other aspects of its mission.

The University of Memphis fulfills its outreach mission through its contributions to professional organizations and to the needs of the community. The University promotes intellectual, cultural, and community development through, for example, its artistic programs, lecture series, technical assistance, continuing education, and intercollegiate athletic programs.

The University of Memphis, through its research, teaching, and outreach roles, responds to individual needs, such as the support of health care and preventive health services. The University addresses broader issues as well, for instance, K-12 education, economic development, environmental initiatives, international programs, computing, and telecommunications.

Statement of Values

The University of Memphis is committed to representing and teaching the highest academic values. Specifically, we:

- seek excellence in every activity and apply the highest feasible standards to the endeavors of faculty, staff, and students;
- protect academic freedom, insist on tolerance of diverse views, and encourage the rigorous pursuit of truth in an open forum;
- are committed to honesty, openness, and integrity in all of our processes and practices;
- serve the public interest and recognize responsibility for seeking ways to use our resources to meet public needs;
- provide equal opportunity for all qualified individuals, without regard to race, ethnicity, gender, or lifestyle choice and recognize an obligation to provide the appropriate environment to accommodate diversity;
- adhere to the principles of shared governance and shared responsibility, meaning that those who are responsible for and affected by the various functions of the University

should have a voice in the policies that govern those actions and share responsibility for them; and

- advance the well-being of those in our University community, including students, staff, faculty, alumni, and supporters.

History

The roots of The University date back to September 12, 1912, with the establishment and beginning of classes at West Tennessee State Normal School, which trained primary and secondary education teachers. However, the seeds for the normal school's creation were sown three years earlier, in 1909, when the Tennessee General Assembly passed a General Education law calling for the establishment and maintenance of three normal schools, one school located in each of the three grand divisions of the state.

The eastern edge of Memphis became the site for West Tennessee State Normal School, which in 1929 became West Tennessee State Teachers College. In 1941, the college expanded its curriculum in liberal arts, and the name was changed to Memphis State College, an institution serving three to four thousand students. The undergraduate program was reorganized into three schools and a graduate school was added in 1951.

Memphis State achieved university status in 1957. On July 1, 1994, the name was officially changed to The University of Memphis.

Governing Body

The governance and control of The University of Memphis is vested in the Tennessee Board of Regents. The Board of Regents consists of eighteen members including thirteen appointed by the Governor; four *ex officio* members—the Governor, the Commissioner of Education, the Commissioner of Agriculture, and the Executive Director of the Tennessee Higher Education Commission—and one statutory member. One member is appointed from each of the state's nine congressional districts, and three members are approved at-large from different geographical areas of the state. A student regent is appointed from one of the system institutions for a one-year term.

Organization

The schools and colleges that make up The University are the Graduate School, the Cecil C. Humphreys School of Law, the University College, the Loewenberg School of Nursing, the School of Audiology and Speech-Language Pathology, and five colleges offering graduate and undergraduate programs: the College of Arts and Sciences, the Fogelman College of Business and Economics, the College of Communication and Fine Arts, the College of Education, and the Herff College of Engineering.

The Memphis Community

Memphis is one of the South's largest and most attractive cities. As a medical, educational, communication, distribution, and transportation center, Memphis offers a rich and full range of research opportunities and cultural experiences. The city, known worldwide for its musical heritage as home of the blues and the birthplace of Rock 'n' Roll, has many fine restaurants, museums, and theaters, as well as one of the nation's largest urban park systems. Annual events include the St. Jude–Liberty Bowl Football Classic, Memphis in May International

Festival, Africa in April Cultural Awareness Carnival, Federal Express–St. Jude Memphis Golf Classic, Carnival Memphis, and Mid-South Fair. Tourist attractions include the Beale Street Historic District, the National Civil Rights Museum, the Center for Southern Folklore, and Elvis Presley's home, Graceland. The medical complex in Memphis is the South's largest and one of the nation's foremost centers of medical research. A public transportation system provides easy travel between the university and other parts of the city.

The University's modern and beautifully landscaped campus is centrally located in an attractive residential area of Memphis, with shopping, recreation, and entertainment centers nearby. In addition to the Main Campus facilities, the university has research and athletic training facilities and married student housing on the South Campus.

Research Facilities

Library Facilities

The University of Memphis Libraries includes the Ned R. McWherter Library and five branch libraries: Audiology and Speech-Language Pathology, Chemistry, Mathematical Sciences, Music, and Earth Sciences, each contiguous to its department or school.

The University Libraries' collection numbers over one million print volumes. The collection also contains many other formats and sources of information, including 2.7 million pieces of microformat, over 8 million pieces of archival materials, 50 licensed databases, 200 federal databases, and full-text Internet access. The Government Publications Department, located in the McWherter Library, is the U.S. Government Regional Federal Documents Depository for the State of Tennessee, and continues to serve as a depository for all State of Tennessee documents. The Special Collections Department's largest collection, the Mississippi Valley Collection, reflects the history and culture of that region of the nation.

The University Libraries' holdings are indicated in the Gateway online system, which is available on over 200 workstations in the various libraries and on the campus network. The University Libraries maintains agreements with other local institutions for shared use of library collections by students, faculty, and staff.

Information Technology

The University of Memphis is committed to supporting campus-wide information technology (IT) necessary to further the use of technologies in research and instruction of its students and faculty. The Division of Information Systems (IS) provides the infrastructure and support necessary for academic activities, networking, telecommunications, and administrative computing. The division provides education and training for widely used software and applications; maintains the campus information technology infrastructure; stresses involvement of students, faculty, and staff in technology matters; and leads the strategic planning process for the use of information technologies.

The IS HelpDesk (678-8888) is the first area of contact for students, staff, and faculty. HelpDesk staff are the primary contact on questions related to software, telecommunications, network, and lab support. In addition they route and track questions to the most appropriate IT personnel and college for resolution. The HelpDesk also makes available desktop and server software for faculty desktops and departmental servers across campus.

Students can access two IS-supported 24-hour computer labs, 14 other departmental labs, and residence halls throughout the university. One of the 24-hour labs is a Super Lab, complete with a smart classroom and full range of multimedia equipment. Many departmental labs have extended evening and weekend hours. From these labs students have access to the internet, use of e-mail, and access to Microsoft software as well as a host of academic-related software on various computing environments. Printing is available in all labs.

Information Systems also extends a variety of technology support services to faculty, staff, and students. This includes software training, consulting assistance for research and instruction, software distribution, and web consulting. Students and faculty can attend free training seminars at our Training Center in Smith 412. It is equipped with PCs, Macs, and smart presentation equipment. Faculty may reserve this facility as well as a smart classroom for their instructional needs. Training courses and workshops are offered on all supported software such as Microsoft products, e-mail access, and web-related technologies. The Faculty Resource area in the Training Center contains the latest multimedia and computer equipment for faculty and instructors to learn technologies or create course material.

Online CBT (Computer Based Training) is available free to all students, faculty, and staff either over the web or through downloadable tutorials to their computer. There are currently over 280 courses available to choose from.

Information Systems supports and maintains the university's fiber network that connects all offices, computer labs, many classrooms and auditoriums, and selected residence halls. IS is also committed to advanced use of technologies and will be a full partner in the Internet 2 activities for research and instructional activities.

IS offers faculty and students telecommunication services such as FAX, long distance service from campus phones (a TigerLine card is required), and cable TV for dorm students.

Bureau of Business and Economic Research

The Bureau of Business and Economic Research is the organized research and public service unit of the Fogelman College of Business and Economics. The programs of the Bureau include public service to government agencies (state and local) and the business community, continuing education, and applied general research.

Bureau of Educational Research

The Bureau of Educational Research (BER) supports the outreach mission of The University of Memphis and the College of Education by mobilizing University resources to confront educational problems in Memphis and the surrounding region. Specifically, BER pursues opportunities for University faculty to collaborate with educational and community leaders to (1) provide research support and technical assistance to education reform initiatives; (2) conduct evaluation studies and needs analyses to support decision making; (3) promote faculty service to public schools; and (4) participate in partnerships designed to build the capacity of the community to address solutions to pressing educational problems. BER contributes to these efforts by working with community representatives, as well as local, state, and national education professionals to define and address critical educational issues facing the Mid-South.

BER maintains a flexible research and development agenda intended to be responsive to the needs of schools and school systems in the region. Consistent with the University's urban outreach initiative, BER engages in the research, development, or service components of projects intended to address one or more of the following areas: (1) educational attainment of economically-disadvantaged and ethnic minority students; (2) systemic reform or collaborative efforts designed to improve educational and social services in the community; (3) physical and emotional well-being of children living in poverty; (4) promotion of multicultural awareness, constructive conflict resolution, and respect for diversity in social institutions; and (5) preparation of education professionals to work in urban settings.

Center for Earthquake Research and Information

The Center for Earthquake Research and Information was established in 1977 by the Tennessee Legislature to provide: (1) prompt reports and background information on regional earthquakes; (2) scientific research on the causes and effects of earthquakes and on the possibility of earthquake prediction; (3) studies related to the desirability of earthquake resistant construction; (4) advice to business, government and the public on the methods, means and feasibility of mitigating earthquake hazards.

The Center operates as a research organization of The University of Memphis and was designated as a Tennessee Center of Excellence in 1985. It supports graduate research in geophysics, active tectonics, and earthquake engineering. It cooperates with the Department of Geological Sciences in offering a Bachelor's and Master's degree concentration in geophysics, and a Ph.D. degree in geophysics.

Center for Research in Educational Policy

The Center for Research in Educational Policy was established by the Tennessee General Assembly in 1985. The mission of the Center is to implement a research agenda to address issues associated with policies and practices in the public schools of Tennessee and the nation. This research agenda was developed in consultation with three advisory councils composed of nationally prominent education authorities, persons representing constituencies within the state of Tennessee, and University faculty.

The Center contributes to the research and outreach missions of the University by forming collaborations with school and community leaders to identify educational policy issues in need of resolution and by mobilizing University and community resources to address these issues in primary and secondary schools. Other outreach activities include co-sponsorship of the annual Memphis Urban Education Symposium; regional, state, and international professional conferences; joint sponsorship of several state academies for school leaders; and electronic on-line support for practicing education professionals.

Center for Research on Women

Founded in 1982, the Center for Research on Women, located in the College of Arts and Sciences, is nationally recognized for its pioneering work on race, class, and gender. Its mission is to promote research in the field of women's studies with a focus on southern women and women of color in the United States. Since its inception, the Center has received grants for research and research related activity from both foundation and government sources.

In addition to research, the Center has played a key role in helping faculty to integrate race, class, and gender into the curriculum.

Center for the Study of Higher Education

The Center for the Study of Higher Education, located in the College of Education, conducts research and sponsors workshops and conferences in higher education. The Community College Student Experiences Questionnaire is located in the Center, as is the Leadership Institute in Judicial Education.

DNA Laboratory

The DNA Laboratory is a University facility providing access to resources required for modern molecular biology research. Custom nucleic acid synthesis and automated DNA sequencing are available on a fee basis to researchers both inside and outside the University. The Laboratory also houses a high-performance gel documentation system and a workstation with the GCG Wisconsin Package for nucleic acid and protein analysis.

Ecological Research Center

The Ecological Research Center (ERC) of the Department of Biology was established in 1974 on the South Campus of the University to conduct and coordinate research, teaching, and service activities in ecology and related areas.

Major areas of research include: fish culture, wildlife biology, endangered and threatened species, systematics, reproductive physiology, and physiological responses to the environment. The ERC has formal research agreements with private, state, and federal organizations to jointly pursue biological problems of mutual interest. The US Fish and Wildlife Service, Wildlife and Habitat Management Office, and the Nature Conservancy have offices in the ERC.

The teaching program of the ERC provides training for students interested in pursuing careers in various fields and affords an opportunity for students to participate in activities involving contemporary environmental problems.

Public service activities are primarily directed toward promoting environmental awareness and providing information and consultation services to those concerned with the environment.

Edward J. Meeman Biological Station

The Edward J. Meeman Biological Station was established in 1967 to encourage and foster scientific pursuits in natural history, ecology, and environmental biology. Located about 23 miles northwest of the main campus and adjacent to Meeman-Shelby Forest State Park, the 623-acre station (with laboratory, classroom, and small conference facilities) provides students and faculty from The University of Memphis, as well as visit-

ing investigators, with a unique site for research, teaching, and service activities. The station is an integral part of the Department of Biology.

Fogelman Executive Center

The Fogelman Executive Center is a modern conference and training facility designed to meet the needs of executives, managers, and professionals in all organizational areas. The Center has fifty-one hotel rooms, fourteen conference and seminar rooms, and two dining rooms.

The staff of the Fogelman Executive Center provides coordination and planning services for all types of conferences and seminars. These services are available to professional level university groups and the Memphis business community.

Institute of Egyptian Art and Archaeology

The Institute, founded in 1984 and designated a Tennessee Center of Excellence in 1985, is a component of the Art Department at The University of Memphis. The Institute is dedicated to the study of the art and culture of ancient Egypt through teaching, research, exhibition, and excavation. It is staffed by Egyptologists who are faculty members of the Art Department and the History Department. Its research library consists of more than 6000 Egyptological books and periodicals including rare and out-of-print volumes. Supporting the Institute's programs is the Art Museum at The University of Memphis which houses the Institute's growing collection of Egyptian antiquities, the largest in the Mid-South. The Institute also sponsors an epigraphic project at the Great Hypostyle Hall of Karnak Temple, Luxor, Egypt.

Institute for Intelligent Systems

The Institute for Intelligent Systems (IIS) is designed to bring together research and training in the broad areas of cognitive science, complex dynamical systems, artificial intelligence, and massively parallel computing (neural computing). The mission of the IIS includes basic research supported by grants from funding agencies and applied research supported by industrial/governmental contracts. The Institute spans the disciplines of cognitive psychology, computer science, philosophy of mind, neuroscience, linguistics, physics, and mathematics. Training includes graduate courses, thesis and dissertation research, workshops, and seminars.

Integrated Microscopy Center

The Integrated Microscopy Center (IMC) houses microscopes, including light and fluorescent microscopes, a confocal laser scanning microscope, scanning and transmission electron microscopes, and ancillary equipment used to prepare samples. The Center is a resource facility of The University of Memphis, designed to provide expertise in the use of microscopy to graduate students, faculty, and researchers at The University of Memphis and throughout the immediate area.

Marcus W. Orr Center for the Humanities

The Center for the Humanities promotes scholarly research and teaching within the humanities at The University of Memphis. Its programs are designed to facilitate discussions of general interest and to encourage scholarly collaboration across departmental and college boundaries. It also seeks to make the scholarly resources of the University—especially those relat-

ing to the study of the humanities—available to the community at large. The Center was founded in 1987 and renamed in 1991 for history professor Dr. Marcus W. Orr.

Regional Economic Development Center

The Center represents the University in its outreach function in the field of economic development planning. In providing technical and management assistance to the public and private sectors, the Center also serves as a laboratory for interdisciplinary research and service by faculty and graduate students in solving problems of urban and regional development. The center's professional planning staff have academic appointments and teach courses in urban and regional planning.

Speech and Hearing Center

Located in the medical center of Memphis, this facility became affiliated with the University in 1967. An additional site is located on the South Campus. Both locations serve children and adults with communication disorders. Students at the University may receive examinations at no charge, while faculty and staff are seen at 50% of normal charges. The University administers and operates the Center in cooperation with the Board of Directors of the Memphis Speech and Hearing Center, Inc.

Other Research Units

In addition to the units described above, The University of Memphis also recognizes a wide array of other research-oriented units:

- Anthropological Research Center
- Barbara K. Lipman Early Childhood Center and Research Institute
- Center for River Studies
- Center for Health Services Research
- Center for Manpower Studies
- Center for Urban Research and Extension
- Chucalissa Indian Museum (C.H. Nash Museum)
- Groundwater Institute
- Industry/University Research Center for Biosurfaces
- Neuropsychology Research Laboratory
- Office of International Studies
- Oral History Research Office
- Robert Wang Center for International Business
- Southern Music Archive
- Transportation Studies Institute

Recognized Centers and Chairs of Excellence

The University of Memphis has been designated by the Tennessee Higher Education Commission as a location for centers and chairs of excellence. The units listed below receive special funding by the State in recognition of their status.

Centers of Excellence

- Center for Applied Psychological Research
- Center for Earthquake Research and Information
- Center for Research Initiatives and Strategies for the Communicatively Impaired

Center for Research in Educational Policy
Center of Excellence in Egyptian Art and Archaeology

Chairs of Excellence

- Arthur Andersen and Company Alumni Chair in Accounting
- Bornblum Chair in Judaic Studies
- Federal Express Chair in Management Information Systems
- W. Harry Feinstone Chair in Molecular Biology
- W. Harry Feinstone Chair in Microbiology and Biotechnology
- Morris S. Fogelman Chair in Real Estate
- Hardin Chair in Managerial Journalism
- Herbert Herff Chairs in Biomedical Engineering
- Herbert Herff Chair in Law
- Jabie Sanford Hardin III Chair in Combinatorics
- Dorothy K. Hohenberg Chair in Art History
- William A. and Ruth F. Loewenberg Chair in Nursing
- William M. Morris Shelby County Chair in International Economics
- Lillian and Morrie Moss Chair in English
- Lillian and Morrie Moss Chair in Philosophy
- Lillian and Morrie Moss Chair in Psychology
- Lillian and Morrie Moss Chair in Urban Education
- Sales and Marketing Executives, Inc. Chair in Sales
- Sparks Family Chair in International Business
- Thompson-Hill Chair in Accounting
- University of Memphis Chair in Free Enterprise Management
- Robert Wang Chair in International Business
- Wunderlich Chair in Finance

Academic Services

Evaluation Services

Evaluation Services conducts The University of Memphis program for student evaluation of instruction. The Student Instructional Rating System (SIRS) uses a comprehensive approach for collecting, analyzing, and reporting student reactions to certain aspects of classroom instruction. Faculty receive the completed forms and a computer summary at the beginning of the following semester. These documents, which form an important part of the dossier prepared for promotion and tenure, also provide information useful to individual faculty for course development and improvement of instruction.

Minority Affairs

The Office of Minority Affairs advises African American students. The office deals with the social, academic, personal, and financial concerns of minority students.

Besides advising individual students, the office advises 15 different organizations for African American students. The Black Student Association is a multipurpose organization that focuses on enlightening individuals about the black culture. It provides a support system that addresses the students' academic needs as well as a U of M black alumni network that aids the students' employment needs. The BSA produces a monthly paper, *The BSA Torch*, which keeps the students informed of

issues relating to African Americans at The U of M and in the Memphis community. The BSA and fourteen (14) other African American student organizations sponsor approximately 160 cultural, social, and academic programs during the academic year.

Psychological Services Center

The Psychological Services Center, located on the first floor of the Psychology Building, offers both psychological evaluations and therapeutic services to children and adults. For appointments or information, contact the Center at 2147.

Student Disability Services

The Student Disability Services Office provides, arranges, and coordinates academic accommodations and support services to qualified students with disabilities to enable them to fully access the educational opportunities at The University of Memphis. To establish eligibility for disability accommodations and services, students are required to register with the Student Disability Services Office and provide current medical or psycho-educational documentation of the disability from a professional who is appropriately qualified to diagnose the particular disability. Disability information is strictly confidential, is not released without written consent, and does not appear on transcripts or any permanent record of the University.

Students must follow established University procedures for obtaining accommodations and services. Specific accommodations and services are determined on an individual basis and are based on documented functional limitations resulting from the disability. Services available include orientation to disability services, assessment of disability related needs, academic accommodation plans each semester, test accommodations, books on tape, note-takers, readers, scribes, interpreters, Braille, enlarged print, loan of adaptive aids and special equipment, adaptive computer lab, guidance and counseling, adapted campus housing, accessible parking, and limited campus shuttle service.

Since some services require advance notice, applicants are requested to provide sufficient notice to Student Disability Services of anticipated needs and expected date of enrollment. For more detailed information, please contact the Director of Student Disability Services at 678-2880.

Academic Common Market

The Academic Common Market is designed to allow students from southern states to pay in-state tuition while attending The University of Memphis. This arrangement is available only for students whose home states do not offer the designated program. The participating states are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. A list of available programs can be obtained from the state coordinator in a student's home state or from the Office of the Dean of the Graduate School. Current SREB common market guidelines and requirements may be found on the web at www.people.memphis.edu/~acadafflib/acm.html

There are two requirements: (1) Students must be fully admitted to a degree-seeking program that has been approved as an Academic Common Market program (non-degree and conditional students are ineligible); (2) Students must obtain a letter certifying residency from their home state's Academic Common Market coordinator.

International Students Office in the Center for International Programs and Services

The International Students Office in the Center for International Programs and Services advises international students, visiting scholars, and researchers regarding federal immigration regulations, health insurance matters, employment issues and personal concerns, as well as prepares federal documents necessary for visiting scholars' entrance into the United States.

The office also produces the federally mandated orientation for F-1 and J-1 visa holders new to campus. This provides information on federal and state laws and University policies, including social security and employment regulations, taxes, visa renewals, and all aspects of their legal non-immigrant status inside U.S. borders. The International Students Office also frequently provides this information for in-country dependent family members of students, faculty, and researchers on campus, as well as to international applicants to the University, and area colleges and university staff.

The office also advises the International Students Association and several international student clubs. The International Students Association presents an annual International Night, the International Film Series, and various other cultural events, including bringing visiting speakers to campus.

Currently, the office consists of: Dr. Arda Beskardes, Immigration Specialist; Clar Nunis, International Students Advisor; and clerical staff. For more information, call 678-4271.

Oak Ridge Associated Universities

Since 1971, students and faculty of the University of Memphis have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 87 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (the DOE facility that ORAU operates) undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the *Resource Guide*, which is available on the World-Wide Web at <http://www.ornl.gov/orise/resgd/htm> or by calling either of the contacts below.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scientist Program, and various services to chief research officers.

For more information about ORAU and its programs, contact Dr. Linda L. Brinkley, ORAU Council member, at 901-678-2590; Monnie E. Champion, ORAU Corporate Secretary, at 423-576-3306; or the ORAU Home Page at <http://www.oraugov.org>.

Jackson Center

The University of Memphis Center in Jackson, Tennessee, is located on the Jackson State Community College campus to serve the citizens of West Tennessee. Through the Center, students can complete certain degree programs by attending part-time at night and on weekends.

The Jackson Center offers course work leading to bachelor's and master's degrees as well as additional graduate and post-graduate course work. Selected graduate and undergraduate courses are offered by the Colleges of Arts and Sciences, Business, Communication and Fine Arts, Education, and University College. The Center is a division of The University of Memphis' Extended Programs.

Cecil C. Humphreys School of Law

The Cecil C. Humphreys School of Law offers a program of instruction leading to the degree of Juris Doctor.

Admission to the Cecil C. Humphreys School of Law is on a selective basis. To be eligible for admission, a student must have received a bachelor's degree from an accredited college or university and must have made a satisfactory score on the Law School Admission Test. Questions concerning additional admissions requirements should be addressed to the Director of Law Admissions and Recruitment at uofmlaw@profnetwork.net.

The regulations and policies of the School of Law are set out in greater detail in the *Law School Catalog*, a separate issue of the *Bulletin*.

2. Admission and Academic Regulations

The Graduate School is open to persons holding the bachelor's or master's degree from accredited colleges and universities whose undergraduate or graduate work has been of sufficient quality and scope to enable them to successfully pursue graduate study. The University of Memphis offers equal educational opportunity to all persons without regard to race, religion, sex, age, creed, color, national origin, physical handicap.

Applicants will be required to meet admissions criteria established by the Graduate School in order to enroll in graduate courses. *In order to be admitted to a degree program in any academic department, students may be required to meet additional standards set by the department or college.*

Individual program requirements described in the Graduate School Issue of the 1999-2001 Bulletin of The University of Memphis are subject to change. Please contact your department or the Graduate School for changes that may occur before publication of the next issue of this Bulletin; or consult the on-line Graduate Bulletin, which includes formal changes made on an annual basis, at: www.people.memphis.edu/~gradsch

The Graduate School homepage contains much additional information useful to graduate students.

Please contact your chosen degree program for a Self-Managed Application kit and specific program requirements.

Prospective students should check with the appropriate program for specific deadlines. For admission to a degree program, applicants should allow a reasonable amount of time for necessary documents to be processed by the appropriate degree program and the graduate school (approximately three to six weeks from date of receipt of complete application). International applicants should allow at least four months for the application process. Applicants are urged to apply early to ensure full consideration.

Late applicants may be treated as having **graduate non-degree status** and are not guaranteed placement in specific classes.

All applications must be accompanied by a twenty-five dollar (\$25.00) non-refundable application fee, unless previously paid.

Return completed applications and required credentials to Graduate School Student Services, P.O. Box 526627, The University of Memphis, Memphis, Tennessee 38152-6627.

See "Admission of International Students" below for details about additional requirements for international applicants.

All credentials become the property of the University and will not be forwarded or returned. Credentials will be maintained in active files for 12 months, after which they will be relegated to inactive status and must be submitted again before an admission decision will be made. The applicant is advised to have all credentials on file well in advance (preferably forty-five days) of the registration period for the term for which application is made.

Admission to Master's Degree Programs

The following Graduate School admissions requirements are **minimum** standards which identify the pool of master's level applicants from which each department selects students to be admitted.

1. Baccalaureate Degree

An official transcript showing a bachelor's degree awarded by an accredited college or university with an acceptable grade point average. In addition, transcripts from any other college or university attended may be requested. (Students who received bachelor's degrees from The University of Memphis may disregard this step.) A student must have graduated with a minimum baccalaureate GPA of 2.00 on a 4.00 point scale. The University considers transcripts received directly from an issuing institution to be official. Signed and sealed transcripts that have been in the applicant's possession can be used for admission purposes; however, official transcripts may later be requested. Personal copies are not acceptable as official documents.

2. Entrance Examinations

New admissions to The University of Memphis Graduate School (except to the MALS program) require submission of an acceptable combination of undergraduate GPA and appropriate entrance examination test score that is not more than five years old. Contact your program for information on what tests are acceptable. *Scores on MAT exams written in less than two month intervals are not acceptable.* Test scores must be sent directly to the Office of Graduate School Student Services. See departmental sections for more information on requirements.

Students who apply for admission to a master's degree program may have the entrance examination waived if (1) the applicant has an earned master's or equivalent degree from an accredited institution, and (2) the program coordinator concurs.

All applicants to the Fogelman College of Business and Economics must submit an acceptable Graduate Management Admissions Test (GMAT) score. In 1998, the average GMAT score for applicants admitted to Master's programs in the Fogelman College was approximately 540.

3. Departmental Requirements

Many departments have higher requirements for admission. See departmental sections for more information on requirements.

Admission to Education Specialist (Ed.S.) Program

The Education Specialist degree is designed for the educator practitioner who desires post-master's training but who does not wish to earn a doctorate. This program is administered by the College of Education; please refer to the appropriate section of this catalog for a more complete description or contact the College of Education for additional details.

Admission to Doctoral Degree Programs

The following Graduate School admissions requirements are **minimum** standards that identify the pool of doctoral level applicants from which each department makes its selection.

1. *A Baccalaureate or Master's Degree as specified by the program:* An official transcript showing a bachelor's or master's degree, depending on program requirements, with an acceptable grade point average is required. The degree must be awarded by an accredited college or university. The University considers transcripts received directly from an issuing institution to be official. Signed and sealed transcripts that have been in the applicant's possession can be used for admission purposes; however, official transcripts may later be requested. Personal copies are not acceptable as official documents.
2. *Entrance Examinations:* New admissions to The University of Memphis Graduate School require submission of an appropriate entrance examination test score that is not more than five years old. Contact your program for information on what tests are acceptable. Test scores must be sent directly to the University.

All applicants to the Fogelman College of Business and Economics Ph.D. program must submit an acceptable Graduate Management Admissions Test (GMAT) score. In 1998, the average GMAT score for applicants admitted to the Ph.D. program in the Fogelman College was approximately 625.

3. *Departmental Requirements:* Some departments may require higher standards or additional items such as portfolios, proficiency examinations, auditions, etc. Refer to the appropriate departmental description in this catalog for details.

Conditional Admission

Upon the recommendation of the appropriate graduate program coordinator, graduate degree applicants whose applications are incomplete may be granted conditional admission status for one semester if they have either an acceptable GPA or an acceptable admissions test score. Students admitted conditionally must furnish an official transcript or an official admissions test score that meets the program's standards by the end of the student's first semester. Students with conditional status may enroll for one semester only for a maximum of nine (9) credit hours of graduate course work. After all admission standards have been met, the conditional student must submit a "change of status" form to be fully admitted to a graduate program. Conditional status does not ensure acceptance into a graduate degree program. Some departments and colleges do not permit conditional status.

Readmission

Refer to the current *Schedule of Classes* for information on readmission. Readmission shifts the student to all rules, prerequisites, and degree requirements listed in the most current *Graduate Catalog*.

Submission of an application for readmission does not ensure acceptance. Readmission may be refused or conditions may be imposed on the student making application.

Students writing a thesis or dissertation or engaged in a culminating project must remain in continuous enrollment until completion of the thesis, dissertation, or project.

Admission of International Students

The University of Memphis believes that the presence of a balanced representation of international students on campus enriches the educational environment for all students. The University is authorized under Federal law to enroll non-immigrant alien students on the "F-1" student visa.

Prospective students should check with the appropriate program for specific deadlines. For admission to a degree program, international applicants should file complete credentials at least four months before the beginning of the semester for which entry is sought. Applicants are urged to apply early to ensure full consideration.

Complete credentials include all the documents listed above under admission requirements as well as those listed below under "Additional Requirements."

The application should be completed and returned to the Office of Graduate School Student Services, Campus Box 526627, The University of Memphis, Memphis, Tennessee, 38152-6627.

A non-refundable application and processing fee of fifty dollars U.S. (U.S. \$50.00) is required of every international applicant, unless previously paid. A check or money order, made payable to The University of Memphis, must be sent with the application form.

Applicants will be selected on a competitive basis and, therefore, admission will not be granted to all applicants who meet only the minimum requirements. Some departments require higher standards or additional items such as portfolios, proficiency examinations, auditions, etc.

All transcripts, test scores, and other credentials must be accompanied by an official English translation of these documents and must be on file in the Office of Graduate School Student Services, AD216, by the stated deadlines.

Additional Requirements

In addition to admissions requirements described above, international students must supply the following:

1. *TOEFL Scores:* All applicants who will be attending the University on a student visa and who are not graduates of The University of Memphis must supply a minimum score of 550 on the paper or 210 on the computer-based Test of English as a Foreign Language (TOEFL). Some units, however, require a higher TOEFL score; check department listings for specific requirements. Testing locations and other information can be obtained by writing to TOEFL, Educational Testing Service, Princeton, New Jersey, 08540, U.S.A. All test scores must be sent directly from the testing agency to The University of Memphis.
2. *Affidavit of Support and Financial Statement:* An applicant who holds or will require an "F-1" student visa must supply, on the form provided by the University, sufficient evidence of financial support for the applicant and all members of his/her family who will accompany the applicant to Memphis. This requires that the applicant certify that his/her intent is to attend the University full-time and that no employment, other than assistantships, will be required.
3. *Health Certificate:* Each international student, within 30 days from the first day of classes, must submit a certificate from a licensed U.S. physician or other qualified U.S. medical authority verifying freedom from tuberculosis. Failure to do so shall result in denial of enrollment. In the event that a student either has tuberculosis or has potential tuberculosis requiring medical treatment, continued enrollment will

be conditional upon the determination by a licensed U.S. physician that such enrollment does not present a risk to others and upon the student's compliance with any medical treatment program.

4. All international students must purchase health insurance before they are allowed to enroll.
5. International students who wish to apply for readmission to the University must meet the deadlines stated above.

Admission to Non-Degree Status

Combination Senior

An undergraduate senior student at the University of Memphis with a total cumulative GPA of at least 3.25, who has filed with his or her graduation analyst a plan for completing the bachelor's degree within two semesters, may request to enroll concurrently in undergraduate and select graduate courses. Students may earn up to 12 hours of graduate credit while enrolled as a Combination Senior/Graduate Non-Degree student. Approval to register for graduate credit does not imply approval for admission into a graduate program at the University or that the credit earned will be accepted towards a graduate degree. After the bachelor's degree is awarded, a Combination Senior/Graduate Non-Degree student must make formal application in order to be admitted to a graduate degree program. Courses taken for graduate credit may not be used for both the baccalaureate and graduate degree.

Graduate Non-Degree

The Graduate Non-Degree classification is for students who wish to enroll in graduate courses but who do not wish to pursue a graduate degree at the University. This option is for transient students, students returning for educational workshops, and students fulfilling professional requirements. Graduate non-degree applicants must show proof of having earned a baccalaureate degree at the time of application. At the end of the first semester of course work, the Graduate Non-Degree student may be required to furnish an official transcript showing at minimum a bachelor's degree from an accredited college or university.

Departments may restrict non-degree students to designated courses only. Graduate Non-Degree students who decide to matriculate for a degree must make application to The Graduate School and must meet *all* admissions requirements. **After acceptance into the master's or doctoral program, the student must complete a minimum of 2/3 of the course credits required in that program irrespective of the number of credits completed as a non-degree student.** Some departments count coursework toward a degree only after admission.

Before registering for a second semester of graduate level coursework, the student is required to sign a waiver agreeing that additional coursework will not apply to degree programs.

Non-degree students must maintain a 3.00 GPA in graduate courses.

Miscellaneous Information

Health Services

Limited medical services are available in the University Health Center upon presentation of a valid student identification card. Outpatient medical services, including general clinical evaluation, diagnosis, and treatment; laboratory and X-ray; family planning; and a dispensary are available. Students are

charged only for lab tests sent off-campus to a reference lab, for medicines (over-the-counter or prescribed by the center) purchased at the dispensary, and for family planning.

Entrance Examination Information

Miller Analogies Test (MAT)—Students who wish to arrange for the MAT should contact the Testing Center, Health Center, Rm. 111, The University of Memphis.

Graduate Record Examination (GRE)—Registration packets for the GRE may be obtained from Graduate School Student Services (AD216), the Graduate School office (AD317), and the Testing Center (HC 111).

Graduate Management Admissions Test (GMAT)—Registration packets for the GMAT are available in Graduate School Student Services (AD 216), the Graduate Studies Office of the Fogelman College of Business and Economics (BA101), and the Testing Center (HC111).

Residency Classification

All determinations concerning the classification of students as in-state or out-of-state for fee purposes are made in the Office of Graduate School Student Services. The determinations are based on the regulations and guidelines of the State Board of Regents. See page 28 for further information. If, for any reason, there is a question about a student's residency classification for fee paying purposes, it is his or her responsibility to check with Graduate School Student Services in AD216.

Veterans Services

The Office of Veterans Services, as a component of the Office of the Registrar, provides assistance to eligible veterans and dependents who enroll at The University of Memphis. The Office also provides information about a variety of programs and services including Programs of Education and Training, VA Tutorial Services, VA Work Study positions, or VA Educational Loans, as well as counseling and referral for personal, family, career, financial, and educational problems.

Veterans and dependents receiving benefits should be aware that benefits will be terminated for graduate students after two consecutive semesters on academic probation, unless the University approves an academic probation continuation (see "Academic Probation" below).

VA benefits and Title IV funds for enrollment fees are subject to cancellation and immediate repayment if the recipient stops attending, whether or not he/she has withdrawn or dropped a course. The instructor will report the last known date of attendance as the "unofficial withdrawal date." Students who stop attending will be assigned a grade of "F" in courses that do not reflect an official withdrawal.

Although advisers are provided for veterans, this assistance does not relieve students of the responsibility for fulfilling all VA and University requirements.

ROTC Programs

Graduate students are eligible to earn a commission as a second lieutenant in the U.S. Air Force by completing 12 semester hours of the AFROTC advanced program in conjunction with their graduate school studies. Applications are accepted during January and February for Fall semester entries.

Graduate students are also eligible to earn a commission as a second lieutenant in the U.S. Army by completing 16 semester hours of the ROTC advanced program in conjunction with their graduate school studies.

Academic Regulations

Graduate and prospective graduate students are expected to become thoroughly familiar with the rules, regulations, and degree requirements of the Graduate School and of the academic departments.

Course Numbering System

Only non-degree, conditional, and fully admitted graduate students may enroll in and receive graduate credit for courses numbered according to the following system:

- 6000-6999 — Courses equivalent to 4000 level senior courses for which a limited amount of graduate credit may be earned. Students will be expected to do more work and/or to perform at a higher level to receive graduate credit.*
- 7000-7999 — Courses open primarily to master's students
- 8000-8999 — Courses open primarily to post-master's students
- 9000 — Dissertation

*Students may not receive credit for a 6000 level course if they have credit at the 4000 level.

Course Load Limitations

Fifteen semester hours of graduate coursework shall be the maximum load for students devoting full time to graduate study during regular sessions. The maximum number of hours of graduate course work for which a graduate student may enroll during the Summer Session is 12.

Those who register for 9 or more hours will be considered full-time students. University-funded graduate assistants must register for no fewer than 12 semester hours (6 dissertation hours) in both the fall and spring terms.

Requests for overloads must be approved by the director of graduate studies in the student's college or school.

Change of Major

Students who have previously declared a major but desire to make a change should apply to the Office of Graduate School Student Services in AD216 to begin the process for a change of major. A change of major is considered the equivalent of reapplying for admission. All admission requirements of the new major must be satisfied before a change can be granted.

Adding and Dropping Courses

Courses may be added or dropped after registration for a limited period of time *only*. Refer to the University Calendar in the *Schedule of Classes* for specified dates. Courses may be added late only upon approval of the instructor and the director of graduate studies in the student's college.

Audit Courses

Students who are registered for one or more classes at The University of Memphis may also register to audit a course with the approval of the chair of the department in which the course will be offered.

Auditors are not required to prepare lessons or papers, or take examinations. They are not to take part in class discussions or laboratory or fieldwork. Students auditing a course will receive "audit" on the transcript only if in the judgment of

the instructor they have attended a sufficient number of courses to deserve the notation on the transcript. Faculty will base their decisions for awarding "audit" only on attendance, since the student is not allowed by policy to participate in any other way.

Persons who are not enrolled for credit courses may register for audit courses with the approval of the department chair. A student may not change from a grade point basis to audit or from audit to a grade point basis after the last day to add classes for that term.

Fees for audits will be assessed on the same basis as fees for credit courses.

Withdrawal from Graduate School

A graduate student may withdraw from the University or drop a course after the drop date *only when circumstances beyond the student's control make it impossible to complete the semester*. Late withdrawals and late drops must be approved by the director of graduate studies in the student's college.

Attendance

Requirements for attendance in any graduate course will be determined by the instructor, and must be communicated in writing to students in the first class meeting of the term.

Grading System

Grades

The grades that may be awarded are as follows: "A, B, C, D, or F." Grades used to postpone or suspend course completion include "I" (incomplete), "IP" (in progress), and "W" (withdrawn).

The grades for student teaching, workshops, practica, internships, theses, and dissertations (designated in the listing of courses with †) shall be "S" (satisfactory), "U" (unsatisfactory), or "IP" (in progress).

Incomplete

The grade "I" (incomplete) may be assigned by the instructor in any course in which the student is unable to complete the work due to extraordinary events beyond the individual's control. The "I" may not be used to extend the term for students who complete the course with an unsatisfactory grade. Unless the student completes the requirements for removal of the "I" within 90 days from the end of the semester or summer term in which it was received (see University Calendar), the "I" will be changed to an "F," regardless of whether or not the student is enrolled. The instructor may grant a 45-day extension if sufficient extenuating circumstances exist. At the end of the 45-day extension period, the "I" grade will automatically revert to an "F" if the student has not completed the requirements. The student will be certified for graduation when all requirements are met, including the removal of all "I" grades. For students who have an "I" in the semester in which they expect to graduate, the certification process will automatically be deferred to the next term.

In Progress

Instructors of research courses may record "IP" for "work in progress" to extend the time required for the completion of such research. A final grade of "S" or "U" is filed upon completion of the project.

Grade Point Average

The Grade Point Average (GPA) for graduate students is computed on ALL graduate courses completed within the specified time period for the degree. Graduate students must maintain a 3.0 GPA ("B"). A grade below "C" (2.0) will not apply toward any graduate degree, but will be computed in the GPA. No more than 7 hours of "C" will be applied towards meeting degree requirements. Grades earned at another university will not be computed in the cumulative GPA. Grades in courses that are older than the time limitation for degree (6 years for master's, 10 years for doctoral) will be shown on the transcript but will not be included in the computation of the GPA used for graduation.

Repetition of Courses

A graduate student may repeat a course in which a grade lower than "B" (3.0) was earned. A student may not repeat the same course more than once for the purpose of obtaining a passing grade or a higher grade. Only the grade earned in the second attempt will be included in the computation of the cumulative grade point average. A maximum of two courses may be repeated to improve a grade.

Grade Changes

Grades properly issued in a course by the faculty member of record *will not be altered* except when an error was made in computation or reporting or as a result of a formal grade appeal.

Credit by Examination

The departments, with approval from the Dean of the Graduate School, may offer graduate courses for credit by examination, provided that total credit by examination applied to a student's degree program does not exceed six (6) semester hours.

The following regulations govern the granting of credit by examination:

1. A student enrolled in a degree program (full-time or part-time) who is in good academic standing may make application to take an examination for credit.
2. Permission to take credit by examination must be obtained from the major adviser, department chair, and the director of graduate studies in the student's college. When this permission is granted, and after payment is made for the cost of the examination, the Dean of the Graduate School will issue the official permit for the examination. When the department chair returns the completed form to the Graduate School, the Dean will authorize the posting of the credit to the student's record.
3. The form of the examination, the method of administering it, and the time of examination are left to the discretion of colleges and departments.
4. To receive credit, the student's examination grade should be a grade equivalent of at least a "B" (3.0). Credit is indicated on the student's record as "S."

Course Validation

The University sets time limits on students as a device to ensure that they have reasonably current knowledge in those courses that comprise the graduate program and for which a graduate degree is awarded. When the University coursework is too old to be included in a graduate program (6 years for

masters, 10 years for doctoral), the department may allow the student access to validation procedures subject to the following regulations:

1. Only students fully admitted to graduate programs and who are in good standing are eligible.
2. Not more than one-third of the total credits in the program may be validated.
3. Only courses with fixed content are eligible for validation. (Independent study, research, special topics courses are ineligible.)
4. Only those courses still being taught are eligible for validation.
5. Validated courses will be graded "S" or "U" with a satisfactory grade given for "B" (3.0) or better performance. Graded exams must be filed in the college in which the course is offered.

For additional information about course validation procedures, contact the Graduate School Office in AD317.

Transfer Credit

Credit towards a graduate degree does not transfer automatically. In general, however, graduate work completed at another institution accredited at the graduate level may be accepted in a graduate degree program at the University, with the following provisions. (1) These courses have not been used for a previous graduate degree. (2) They relate to the content of the graduate program and/or are comparable to those offered at the University. (3) They do not exceed time limitations set for master's and doctoral programs.

Credit earned at another institution must be presented for evaluation no later than the student's application for degree candidacy. Forms are available in the Graduate School Office (AD317).

Approved transfer credit may be accepted for *not more than 6 semester* hours of course credit toward a master's or Ed.S. degree (for exceptions, see the departments of Art and Geography and Planning and the IMBA concentration). Credit will be transferred to apply toward a doctoral program upon approval of the student's departmental advisory committee; however, the last thirty semester hours of credit for the doctoral degree must be earned at The University of Memphis.

Courses must meet the following two requirements. (1) The Tennessee Board of Regents requires a minimum of 750 contact minutes for each semester credit (2250 for a 3-hour course). (2) The Tennessee Conference of Graduate Schools requires a minimum of 3 hours of classwork per week for 3 hours of credit.

Grades earned at another institution will not be computed in the University cumulative grade point average, nor will they be accepted for transfer, unless they are "B" (3.0) or better. No credit will be transferred unless it meets with the approval of the major adviser or department graduate coordinator.

Academic Misconduct

Graduate students at The University of Memphis are expected to observe the regulations and policies that govern the behavior of students as members of this academic community. These regulations and policies are published in the Student Handbook. In particular, graduate students should become familiar with the University's policies on plagiarism in its various forms. Additionally, term papers may not be used to meet the requirements of more than one course unless approved in advance by both instructors.

The Academic Discipline Committee, a University standing committee appointed by the President, addresses violations of academic misconduct.

Academic Probation

A graduate student whose cumulative grade point average drops below 3.00 will be placed on probation. Two consecutive semesters on probation can result in suspension. Conditions under which continuation in the graduate school will be granted must be recommended by the department and approved by the director of graduate studies in the student's college. If, in the opinion of the director of graduate studies and the academic department, the student is not making satisfactory progress toward degree completion, the student will be dismissed from the degree program.

Graduate Faculty

The University bestows the designation "Graduate Faculty" upon faculty following review of their credentials and recommendation by their colleagues. Applicants for graduate faculty status must show evidence of scholarly productivity.

The graduate faculty support graduate programs by chairing and serving on graduate student committees, planning and designing graduate instructional programs, supervising graduate student research, participating in the design and review of policies governing graduate affairs, and discharging other duties critical to maintaining an effective graduate school.

The University of Memphis maintains four levels of graduate faculty, full, associate, adjunct, and affiliate. Only full graduate faculty members may chair doctoral committees. Full or associate graduate faculty may chair master's committees. Only one adjunct or affiliate graduate faculty member may serve as a voting member on a master's or doctoral committee. Contact the Graduate School for additional information.

Graduate faculty membership is required to teach graduate only (7000, 8000 level) courses and seminars. When instructors who are not members of the graduate faculty teach graduate only course work, except for the Applied Music program (MUAP), the appropriate department chair will notify the Dean of the Graduate School.

Privacy Rights of Parents and Students

The University complies fully with the Family Educational Rights and Privacy Act of 1974. This act is designed to protect the privacy of educational records, to establish the right of students to inspect and review their educational records, and to provide guidelines for the correction of inaccurate or misleading data through informal and formal hearings. Students also have the right to file complaints with The Family Educational Rights and Privacy Act (FERPA) Office concerning alleged failures by the institution to comply with the Act.

The provisions for the release of information about students and the rights of students and others to have access to The University of Memphis education records are published each semester in the *Schedule of Classes*. A copy of the Act and The University of Memphis Procedure may be reviewed in the offices of the Registrar or University Counsel.

Appeals Procedures

A student has the right to appeal decisions made by University officials in the implementation of University policy. If a student feels that individual circumstances warrant an appeal, the request for appeal must be filed in the University office

responsible for the administration of that policy or the office specified in the policy statement.

Grade Appeals

This appeal procedure provides any graduate student at The University of Memphis with a clearly defined avenue for appealing the assignment of a course grade that the student believes was based on prejudice, discrimination, arbitrary or capricious action, or other reasons not related to academic performance. **In all cases the complaining student shall have the burden of proof with respect to the allegations in the complaint and in the request for a hearing.**

If the student fails to pursue any step of the procedure within the prescribed time limits (see steps below), the disposition of the student's complaint made in the previous step shall be final. If the chair or dean fails to respond to the student's complaint within the time limits, the Graduate Grade Appeals Committee will act on the student's complaint. The procedure is terminated if the student and the instructor agree on the grade or if the student fails to appeal a decision within the appropriate time limit.

Copies of all correspondence and records will be retained in the office in which the complaint is finally resolved. The original documents will be forwarded to the Graduate School Office for filing.

At each step, all parties involved must be notified in writing of the resolution.

The student must adhere to the following procedure, carefully observing the deadlines.

Step 1

Time Limitation: Early enough to meet the deadline in Step 2.

The student shall first consult with the instructor in an effort to provide a satisfactory resolution of the complaint. In the event the student cannot schedule a meeting with the instructor, the student may contact the department chair, who will schedule the meeting between the student and the instructor. If for any reason the instructor is not available, proceed to Step 2. If agreement is reached between the student and instructor, the appeal process ends.

Step 2

Time Limitation: Forty-five (45) days (including weekends and holidays) from the end of the term in which the contested grade was received.

If the complaint is not resolved in Step 1, the student must complete a Graduate Grade Appeal Form (available in the Graduate School Office, AD317). This form, accompanied by a written statement detailing the factual basis of the complaint, will be sent by the Graduate School to the chair of the department in which the course was taken. The written complaint must be received by the chair within forty-five (45) days from the end of the term in which the contested grade was received. The department chair will then address the complaint in consultation with the instructor and the student within fifteen (15) days of the date of submission of the written complaint. The department chair may, at his or her discretion, counsel with the faculty of the department.

If the department chair was the instructor of the course involved in the complaint, or if for any reason the chair disqualifies him/herself, the student may proceed to Step 3.

The student's grade may be changed in Step 2 of the appeal procedure by the written consent of the instructor and the student.

Step 3

Time limitation: Within five (5) days after the fifteen-day period above.

If the complaint cannot be resolved at the level of Step 2 within the prescribed fifteen (15) day time period, the student has five (5) days to request in writing that the chair forward the complaint to the dean of the college. The chair will provide the dean with the Graduate Grade Appeal Form, a copy of all correspondence, and other records pertaining to the complaint.

The dean may utilize any resources available to resolve the grade conflict within a fifteen (15) day period. If the dean finds that the request does not have merit, he or she shall notify the student, the instructor, and the chair. If the dean and chair are in agreement that the grade should be changed, either raised or lowered, the dean shall be empowered to change the grade without the instructor's consent. Otherwise the grade shall remain as recorded.

Either the student or the instructor may appeal the decision made under Step 3 within *five (5) days* by filing a written request for a hearing before the Graduate Grade Appeals Committee with the Dean of the Graduate School. This request must be accompanied by the Graduate Grade Appeal Form, a copy of all correspondence, and other records pertaining to the complaint.

Step 4

Time limitation: Within five (5) days after the fifteen (15) day period above.

The written request for a hearing before the Graduate Grade Appeals Committee should state the factual basis for the appeal of the dean's decision. All supporting documents, including the Graduate Grade Appeal Form, should be included at the time of submission.

The Dean of the Graduate School will forward the request to the chair of the Graduate Grade Appeals Committee. The chair will subsequently distribute copies of the request to the members of the committee for consideration. If the Committee finds the student's or the instructor's request merits a hearing, the Committee shall notify the student, the instructor, the chair, and the college dean of the date, time, and the location of the hearing. If the Committee finds that the request does not merit a hearing, the student, the instructor, the chair, and the dean shall be so notified in writing.

The Graduate Grade Appeals Committee may utilize any available resources to resolve the conflict within a two-week period. If the Committee is in agreement that the grade should be changed, either raised or lowered, the Committee shall be empowered to change the grade without the consent of the instructor. Otherwise, the grade shall remain as recorded. The decision of the Committee will be communicated to all parties in writing. **The decision of the Graduate Grade Appeals Committee shall be final.**

The Graduate Grade Appeals Committee shall be composed of seven members and seven alternates constituted as follows:

A chair designated by the Dean of the Graduate School and selected from the graduate faculty; a graduate faculty member and alternate designated by the Dean of the Graduate School; two graduate faculty members and two alternates elected by the University Council for Graduate Studies and Research; three students and three alternates selected through the Graduate Student Association.

The appeals procedure is not complete until all appropriate records are forwarded to the Graduate School Office. At this

time, the Dean of the Graduate School will notify the Office of the Registrar, Corrections, of any grade change. A copy of the Graduate Grade Appeals Form will become a part of the student's file. A permanent record of all grade appeals reviewed by the Grade Appeals Committee shall be maintained in the Office of the Graduate School.

Although the primary responsibility of the committee is to review appeals, the committee will report any obvious discriminatory or capricious conduct on the part of either the student or the instructor to the Dean of the Graduate School for consideration and action.

NOTE: The summer semesters are considered as one term for grade appeal purposes; i.e., the period for appealing is 45 days from the end of the last summer term.

In counting days to the deadlines above, every day (including Saturday, Sunday, and holidays) is counted.

Retention Appeals

Appeals are to be presented and hearings on appeals convened only during periods in which the academic units of the University are in session. Time limitations will be extended to accommodate this requirement.

All parties concerned must receive copies of:

1. The requests for a hearing,
2. Notices of the time and location of the hearing, and
3. Disposition of the hearing request in each step of the appeal procedure.

As soon as notice is received that the appeal is continuing, copies of all correspondence and other records pertaining to the complaint must be forwarded to all concerned.

Step 1

A. Time Limitation: Forty-five (45) days (including weekends and holidays) from the end of the term during which the termination was received.

The student must submit a written request to the department chair for a hearing to appeal termination from the program. The request should state the factual basis for the appeal.

B. Time Limitation: Fifteen (15) days following the receipt of the complaint.

In consultation with the student and appropriate departmental committee, the department chair will render a decision on the appeal. The student and departmental committee will be notified in writing of the department chair's decision and reasons supporting the decision.

Step 2*

A. Time Limitation: Five (5) days following the announcement of the decision by the chair.

The student or the departmental committee may appeal the decision made in Step 1 by filing, with the director of graduate studies in the student's college, a written request for a hearing before the college council for graduate studies. The request should state the factual basis for the appeal of the chair's decision.

B. Time Limitation: Fifteen (15) days following the receipt of the written request.

The college council for graduate studies will notify the student, departmental committee, and chair of the date, time, and location of the retention appeals hearing. If the college council agrees that the student should be reinstated, the council shall be empowered to reinstate the student. The student, departmental committee, and chair will be notified in writing

of the college council's decision and reasons supporting the decision.

[*In the case of free-standing departments that are not represented on a college council, Step 2 will be omitted and the appeal will be forwarded to the dean of the unit involved.]

Step 3

A. Time Limitation: Five (5) days after the announcement of the decision by the college council.

If the complaint cannot be resolved at the level of Step 2, the student or the departmental committee may request in writing that the director of graduate studies in the student's college forward the complaint to the dean of the appropriate college.

B. Time Limitation: Fifteen (15) days following the written request for appeal.

The college dean may utilize any resources available to resolve the conflict. The chair, the director of graduate studies in the student's college, the departmental committee, and the student will be notified in writing of the dean's decision.

Step 4

A. Time Limitation: Five (5) days following the announcement of a decision by the college dean.

If the complaint cannot be resolved at the level of Step 3, the student or the departmental committee may appeal the decision by filing, with the Dean of the Graduate School, a request for a hearing before the University Council for Graduate Studies and Research. The written request for a hearing must state the factual basis for the appeal.

B. If the University Council for Graduate Studies and Research finds that the appeal does not merit a hearing, all concerned parties shall be notified by the graduate dean.

C. Time Limitation: Fifteen (15) days following the receipt of the written appeal.

If the University Council for Graduate Studies and Research finds that the appeal merits a hearing, it will notify the college dean, the director of graduate studies in the student's college, the department chair, the departmental committee, and the student of the date, time, and location of the retention appeals hearing. Any available resources may be used by the University Council to resolve the conflict. If the University Council agrees that the student should be reinstated, it shall be empowered to reinstate the student. The Dean of the Graduate School will notify in writing all concerned parties and the student of the decision and reasons supporting the decision.

The decision of the University Council for Graduate Studies and Research shall be final.

Expiration of Catalog

The degree requirements published in the *Graduate Bulletin* of The University of Memphis are valid for seven years from the beginning of the academic year to which the catalog applies. A student may complete the degree under the provisions of any valid university catalog provided the effective date of that catalog is not earlier than the student's initial graduate admission to the university or some other accredited institution of higher learning. For students entering in Fall 1999, this two-year issue of the catalog is valid until Summer 2006; for students entering in Fall 2000, it is valid until Summer 2007.

NOTE: Although the requirements for a degree program may be effective for seven years, there are other time limitations relating to the completion of specific degrees within specific time periods. See Time Limitations sections for graduate degrees in the following portions of this chapter.

Minimum Degree Requirements

Graduate Academic Programs

Graduate students are expected to be aware of and to comply with the general requirements for the degrees they are pursuing as outlined in the Graduate School Catalog. In addition to the general requirements, students are expected to conform to any additional requirements set by the student's college or department.

A wide variety of graduate programs of study are offered in The Graduate School at The University of Memphis. Candidates for a degree must design a plan in consultation with their major adviser and then obtain the appropriate approvals.

The University of Memphis offers Master's degrees, Education Specialist degree, and Doctoral degrees. The Master's programs are: Master of Arts (M.A.), Master of Science (M.S.), Master of Arts in Liberal Studies (M.A.L.S.), Master of Arts in Teaching (M.A.T.), Master of Business Administration (M.B.A.), Master of City and Regional Planning (M.C.R.P.), Master of Fine Arts (M.F.A.), Master of Health Administration (M.H.A.), Master of Public Administration (M.P.A.), and Master of Music (M.Mu.). In addition, the degrees of Education Specialist (Ed.S.), Doctor of Education (Ed.D), and Doctor of Musical Arts (D.M.A.) are offered. The Doctor of Philosophy (Ph.D.) is awarded in audiology and speech pathology, biology, business administration, chemistry, communication arts, counseling psychology, educational psychology and research, engineering, English, geophysics, history, mathematics, music, philosophy, and psychology.

Foreign Language Proficiency

A reading knowledge of at least one foreign language is required in several graduate programs. This requirement may be met in one of the following three ways. (1) The student achieves a score on the Graduate School Foreign Language Test (GSFLT) acceptable to the department granting the degree. (2) The student earns a grade of "B" (3.0) or better in designated courses. (3) The student demonstrates a reading knowledge of a foreign language at a level acceptable to either the Coordinator of Graduate Studies or the chair of the Department of Foreign Languages and Literatures. For additional information consult the department directly.

Minimum Requirements for Master's Degree

Course Requirements

The master's degree program shall generally include 30-36 semester hours of course work. Refer to the appropriate department listings for additional requirements for the E.M.B.A., the I.M.B.A., the M.A. in Audiology and Speech Pathology, the M.A.T., the M.F.A. in Creative Writing, the M.F.A. in Theatre, the M.F.A. in Studio Art, the M.H.A., the M.P.A., the M.S. in Counseling and Personnel Services, the M.S. in Human Movement Science, and the M.C.R.P. The student's program must be approved by the major department. *A student may be required to take courses beyond the minimum to ensure balance and depth in the discipline.*

A minimum of 70% of the total required hours must be provided by 7000 level courses.

No more than 9 hours of workshop courses and independent study courses may be applied to a master's degree.

Additional Program Requirements

Each graduate program listed in this catalog has minimum degree requirements. In consultation with the faculty, the coordinator of each graduate program may specify any additional requirements, such as prerequisites, a reading knowledge of a foreign language, a working knowledge of statistics, or specific courses related to graduate or teaching assistantships.

Time Limitation

All requirements for the degree must be completed in six years. Courses more than six years old will not be allowed as credit toward the master's degree.

There are no exceptions to this policy. However, students may request the option of validating old courses as described in the *Academic Regulations* of this *Bulletin*.

Grades earned in courses that are older than six years will be shown on the transcript but will not be included in the computation of the GPA for graduation purposes.

Thesis Requirements

Most departments provide students both a thesis and a non-thesis option (see department descriptions).

A thesis of 3 to 6 semester hours may be presented as partial completion of degree requirements. Students must enroll for thesis credit each academic semester until the thesis is completed.

Upon completion of the thesis, the student must successfully complete an oral defense as determined by a unanimous vote of the student's committee. (If the oral exam encompasses both the comprehensive and the defense, the results should be reported separately on the forms provided.) The defense is administered by the student's advisory committee. Only one adjunct or affiliate graduate faculty member may serve as a voting member on a master's committee.

The final draft of the thesis must be approved by *all* members of the student's committee and the Dean of the Graduate School for final acceptance. A copy of that final draft must be submitted to the Graduate School after the successful defense.

The Graduate School requires three copies of the master's thesis. Consult with your department chair and/or thesis adviser as to the number of additional copies required.

Continuous Enrollment

A student who fails to complete the thesis after having registered for the maximum degree credit allowable must register for thesis credit each academic semester until the thesis is completed. Registration in the extended term of summer school will fulfill the requirement for the summer. See individual departments for specific requirements. Failure to so register will result in the student being charged back tuition for each semester he or she did not enroll.

This policy also applies to the three-hour capstone project (PLAN 7986) required for the Master of City and Regional Planning (MCRP) degree and the culminating experience required for the Ed.S. degree.

Thesis Credit

Credit will be posted upon completion and acceptance of the thesis. No more than 6 hours will be allowed for a master's thesis, even though the student may have been required to register for additional hours in order to remain in active status.

If a student elects not to complete the thesis, a retroactive drop (or withdrawal) must be processed for the last term of enrollment in thesis credit to reflect the change of program on the student's transcript.

Admission to Candidacy

Before an applicant will be officially admitted to candidacy for a master's degree, the student must have satisfied the following requirements:

1. The "Application for Admission to Candidacy for the Master's Degree" and an "Intent to Graduate Card" must be filed by the deadline published in the *Graduate Bulletin* and in the *Schedule of Classes* and posted on department bulletin boards on campus. *No exceptions will be made if candidacy forms are not submitted by the stated deadlines.*
2. The student must have at least a 3.0 average on all coursework listed on the candidacy forms as well as any other graduate work undertaken at The University of Memphis within the specified time limit (6 years). Grades of "D" or "F" are not accepted for any graduate degree credit but these grades will be computed in the GPA. No more than seven (7) hours of 2.0 will be counted toward degree requirements.
3. Grades made the final semester may not be used to correct GPA deficiencies. The student must have at least a 3.0 average in all graduate work at the time the Intent to Graduate Card is filed.
4. The program must include a minimum of 70% of the total required hours as 7000 level courses.
5. All requirements of the Graduate School, the student's college, and the department must be met.
6. The student's graduate work up to this point must be acceptable in quality and quantity to the major adviser, department chair and/or director of graduate studies in the student's college, and the Dean of the Graduate School.

It will be the responsibility of each graduate student to notify the Graduation Analyst (AD317) of any changes in name or address. Students who are graduating will receive a letter explaining graduation ceremony requirements about one month prior to graduation.

Comprehensive Examination

Before being recommended for graduation, every candidate for the master's degree is required to pass a final comprehensive examination. The comprehensive examination should be administered only to students in good standing in the last term of coursework. It may be oral or written or both, at the discretion of the department. *The result of the exam must be communicated to the Graduate School.*

It is the student's responsibility to confer with the appropriate department regarding the time and place of the examination.

A student who does not perform satisfactorily on the first comprehensive examination will be given an opportunity to retake the examination at the next regularly scheduled examination period. The department will recommend appropriate coursework, which the student may elect to take in preparation for retaking the exam.

Comprehensive examinations are not course grades and so are not appealable, nor can they be changed after the form has been filed with the graduate school. Students may retake the

examination, however. A second failure results in termination, which is appealable. The appeals process is formalized and must be followed in all cases.

Second Master's Degree

Students who hold a master's degree from The University of Memphis may pursue a second master's degree with a different major or degree if a department accepts them. No more than six (6) semester hours of the first degree may be applied toward the second degree (see exceptions in the M.F.A. in Creative Writing, M.F.A. in Art, M.F.A. in Theatre, and the M.C.R.P.). The department with which a student is studying will determine whether any credit from the former degree will be accepted toward the second degree. Any credit accepted toward the second degree must be within the regular time limit requirements for the master's degree. Two degrees may be pursued simultaneously or sequentially.

Education Specialist

The Education Specialist degree is designed for the educator-practitioner who desires post-master's training but who does not wish to earn a doctorate. For additional information, please refer to the College of Education section of this catalog.

Minimum Requirements for Doctoral Degrees

Course Requirements

Course requirements for the doctoral degree vary with the department; see the appropriate section in this catalog. The student's program must be approved by the major department. *A student may be required to take courses beyond the minimum to ensure balance and depth in the discipline.* The last thirty hours of credit must be earned at the University of Memphis.

Additional Program Requirements

Each graduate program listed in this catalog has minimum degree requirements. In consultation with the faculty, the coordinator of each graduate program may specify any additional requirements, such as prerequisites, a reading knowledge of a foreign language, a working knowledge of statistics, or specific courses related to graduate or teaching assistantships.

Time Limitation

No credit earned more than ten years prior to the student's expected date of completion of the doctoral degree will be applied toward satisfying course requirements for the doctoral degree.

There are no exceptions to this policy. However, students may request the option of validating old courses as described in the *Academic Regulations* of this catalog.

Grades earned in courses older than ten years will be shown on the transcript but will not be included in the computation of the GPA for graduation purposes.

Residency Requirement

The purpose of the residency requirement is to provide doctoral students with significant time for sustained participation with peers and faculty members in scholarly and creative

activities. Residency is expected to be a vehicle for socialization into the shared community of professional life.

The student must commit to full-time study for a minimum of two successive semesters after admission to the degree program to fulfill the residency requirement. Some departments do not count the summer term towards residency. The College of Education has an alternative residency program; refer to the appropriate section of this catalog or contact the College for additional information.

Qualifying Examination

Individuals seeking a doctoral degree may be required to take a qualifying examination administered by the department in which the student wishes to major. The examination may cover specialized and general knowledge of the major area as well as writing skill. The results of the qualifying exam should be used, in part, to plan the academic program. To be eligible to take this qualifying examination, the student must be fully admitted to the Graduate School. Departments may hold additional requirements.

Advisory Committee

After admission to the doctoral program, the student will be assigned a major adviser, a full member of the Graduate Faculty, to chair the student's Advisory Committee. The department chair, following consultation with the student and major adviser, will approve the appointment of a minimum of three members to the Advisory Committee. Only one adjunct or affiliate graduate faculty member may serve as a voting member on a doctoral committee. These appointments will be forwarded to the Dean of the Graduate School.

Comprehensive Examination

When a student in good standing has completed all required coursework for the doctoral degree or is enrolled in the last semester of coursework (exclusive of dissertation hours), he or she must pass a comprehensive examination. This exam must be both written and oral, covering the major and collateral fields of study. Performance must be acceptable to the Advisory Committee (only one dissenting vote is allowed). Comprehensive examinations are not course grades and so are not appealable, nor can they be changed after the form has been filed with the graduate school. Students may retake the examination, however. A second failure results in termination, which is appealable. The appeals process is formalized and must be followed in all cases.

A student may register for dissertation hours only after passing the comprehensive examination and submitting an approved Program of Study.

Dissertation

An acceptable dissertation is a requirement for all doctoral degrees. The dissertation must represent a significant scholarly effort that culminates in an original contribution to the field of inquiry. It should reflect the candidate's ability to conduct independent research and interpret in a logical manner the facts and phenomena revealed by the research.

The prospectus is developed under the guidance of a dissertation committee (minimum of four members) made up of graduate faculty and approved by the department chair and/or college director. The chair of the dissertation committee must hold full graduate faculty status. It is strongly recommended that one member be outside the discipline. Only one adjunct or affiliate graduate faculty member may serve as a

voting member of a doctoral committee. All members of the dissertation committee must approve the prospectus and the approval form must be filed with the Graduate School.

The dissertation must meet the specific regulations of the department in which the student is majoring and the Graduate School. The final draft must be approved by all members of the dissertation committee and by the Dean of the Graduate School. This final draft of the dissertation must be submitted to the Graduate School after the defense.

A minimum of three copies of the dissertation must be submitted for binding. The dissertation, which will be micro-filmed, must be accompanied by an unnumbered abstract of not more than 350 words. The abstract will be published. Fees to cover the cost of microfilming and publishing are specified in Section 3, under "Miscellaneous Fees," and are to be paid by the student.

Continuous Enrollment

Doctoral candidates must register for dissertation credit each academic semester until the dissertation is completed in order to remain in active status. (The summer term will be considered an academic semester for this purpose). See individual departments for specific requirements. Failure to so register will result in the student being charged back tuition for each semester he or she did not enroll.

Dissertation Credit

Credit will be posted upon the completion and acceptance of the dissertation. No more than the total number of semester hours for dissertation required by the department will be counted towards the degree, even though the student may have registered for additional hours in order to remain in active status.

Admission to Candidacy

Before an applicant will be officially admitted to candidacy for a doctoral degree, the student must have satisfied the following requirements:

1. The "Application for Admission to Doctoral Candidacy" and an "Intent to Graduate Card" must be filed by the deadline published in the *Graduate Bulletin* and in the *Schedule of Classes*, and posted on department bulletin boards on campus. *No exceptions will be made if candidacy forms are not submitted by the stated deadlines.*
2. The student must have at least a 3.0 average on all coursework listed on the candidacy forms as well as any other graduate work undertaken at The University of Memphis within the specified time limit (10 years). Grades of "D" or "F" are not accepted for any graduate degree credit but these grades will be computed in the GPA. No more than seven (7) hours of 2.0 will be counted toward degree requirements.
3. Grades made the final semester may not be used to correct GPA deficiencies. The student must have at least a 3.0 average in all graduate work at the time the Intent to Graduate Card is filed.
4. All coursework offered for the doctoral degree must have been completed within 10 years.
5. The student's entire program, including the dissertation, must be acceptable to the dissertation committee, department chair and/or director of graduate studies in the student's college, and the Dean of the Graduate School.

It will be the responsibility of each graduate student to notify the Graduation Analyst (AD317) of any changes in name or address. Students who are graduating will receive a letter explaining graduation ceremony requirements about one month prior to graduation.

Defense of Dissertation

After the completion of the dissertation and all other prescribed work for the degree, candidates will be given a final oral examination dealing with the dissertation and its relation to the candidate's major field of study. The student's dissertation advisory committee will conduct this exam. *All* members must be present at the examination. If the student's performance on this examination is satisfactory as judged unanimously by the committee, all requirements for the degree will have been completed.

Graduate Assistantships

Graduate teaching and research assistantships are available in most of the academic areas of The University of Memphis. Full-time assistants may anticipate \$4,500—\$15,000 per academic year plus a tuition waiver based on 20 hours of service per week. Graduate assistants who work *at least* 10 hours per week are classified as in-state students for fee-paying purposes for *the term of their appointment as graduate assistants*. University supported graduate assistants are expected to carry a 12-credit-hour load every semester. Nonresident assistants appointed for the preceding spring semester are eligible for in-state fees for summer, whether or not the student holds an assistantship in that summer term. Non-degree and conditional students may not be awarded an assistantship.

Graduate Awards and Fellowships

Graduate student fellowship and award information can be obtained in the Office of the Dean of the Graduate School, AD 308, or by calling (901) 678-2590. The Graduate School administers the following awards and fellowships:

The *Van Vleet Memorial Doctoral Award* is granted to two to three incoming doctoral students enrolled in the designated science fields of Audiology & Speech-Language Pathology, Biology, Chemistry, Geological Sciences, Mathematical Sciences, Microbiology & Molecular Cell Sciences, Psychology, Biomedical Engineering, Civil Engineering, Electrical Engineering, and Mechanical Engineering. Eligible students must be nominated by their respective department chair. The award includes a stipend of \$16,000 per year for four years plus tuition waiver.

The *Provost's Predoctoral Diversity Award* is granted to two to three outstanding entering doctoral students who are members of a group underrepresented as doctoral students in their academic discipline. Eligible students must be nominated by their respective department chair. The award includes a stipend of \$16,000 per year for four years plus tuition waiver.

The *Tennessee Board of Regents Graduate Minority Fellowship* is available to African American residents of Tennessee who are fully admitted to a graduate program. Preference is given to students in programs where African Americans are underrepresented. The fellowship is awarded for two years and provides a tuition waiver and a stipend of \$6,000 for full-time students and \$1,000 for part-time students.

The *University of Memphis Society, Inc., Doctoral Fellowship*, established by UMS, Inc., annually awards a \$2,000 fellowship to a full-time doctoral student based on exceptional academic achievement.

The *Part-time Master's Fellowship* is awarded to fifteen master's students (three from each of the five colleges) who have completed 12 hours of graduate work at the U of M, have a 3.5 grade point average, and will be taking 3-8 hours during the semester in which they receive the award. The directors of graduate studies in the various colleges recommend students to the Dean of the Graduate School. The stipend is \$150 per semester and is renewable up to five times.

Applications for the following fellowships should be submitted to the unit listed:

The Fogelman College of Business and Economics

Arthur Anderson and Company Scholarship: Graduate student pursuing Masters in Accounting. Must have minimum GPA of 3.5.

Business and Economic Alumni Chapter Scholarship: Full-time graduate student; must have minimum GPA of 3.5. Financial need is considered.

Charles Greisbeck Scholarship: Full-time student majoring in accounting. Must have a minimum GPA of 3.5. Student must have exhibited leadership skills.

Humko Doctoral Fellowship: Third-year Business Administration doctoral student concentrating in Marketing.

John Malmo Scholarship: Full-time student concentrating in Marketing. Must have a minimum GPA of 3.5.

Morgan Keegan Scholarship: Full-time or part-time student majoring in finance. Must have a minimum GPA of 3.5.

Dr. G. P. Racz Leadership Fellowship: Full-time student majoring in accounting or international business. Must have a minimum GPA of 3.25. Must have exhibited leadership; may be a graduate assistant.

R. Eugene Smith Scholarship: Graduate student in higher education management, with a GPA of 3.0. Must be a U. S. citizen.

Mark Sowards Memorial Scholarship Fund: Full-time graduate student. Must have a minimum GPA of 3.5. Must have an intent to enter into the field of real estate.

Stacey Steckler Sprinkler Scholarship: Full or part-time student majoring in accounting with a minimum GPA of 3.5. Financial need is considered.

Tilson Real Estate Fellowship: Full or part-time student majoring in real estate with a minimum GPA of 3.5.

The College of Education

The *Dr. R. Eugene Smith Fellowship* equivalent to in-state tuition is awarded annually to a graduate student pursuing studies in higher education administration.

The *George W. Etheridge Early Childhood Education Scholarship* is a three-year award presented to an early childhood doctoral student who has research experience; demonstrates academic, professional, or civic leadership; and is interested in young children.

The School of Audiology and Speech-Language Pathology

The *AUSP Alumni Chapter Fellowship* is awarded each spring semester to a graduate student in Audiology and Speech-Language Pathology. The recipient must demonstrate outstanding clinical skills and support of student and departmental activities.

The *Marion G. Evans/Exchange Club of East Memphis Fellowship* is awarded annually to graduate students training to work with the hearing impaired.

The Herff College Of Engineering

The *Herff Engineering Fellowship* is a \$8,500, one-year, non-renewable award for graduate students in Engineering.

The *Herff Engineering Doctoral Fellowship* is a \$15,000 per year, three-year award for graduate students in Engineering pursuing a Ph.D. degree in which the research emphasis is in an area related to Biomedical Engineering.

Federal Aid

Limited federal assistance, in the form of Stafford Loans or Perkins Loans, is also available. Contact the Office of Student Aid at (901) 678-2303 for more information.

VA benefits and Title IV funds for enrollment fees are subject to cancellation and immediate repayment if the recipient stops attending, whether or not he/she has withdrawn or dropped a course. The instructor will report the last known date of attendance as the "unofficial withdrawal date." Students who stop attending will be assigned a grade of "F" in courses that do not reflect an official withdrawal.

Graduate Student Association

The Graduate Student Association represents all graduate students enrolled in the University, serving their unique needs. The executive board and the Graduate Student Council conduct business. Each department serving graduate students within the various colleges selects a representative to serve on the council. A student is selected by the organization to serve as a representative to the University Council for Graduate Studies and Research. Other students are selected to serve on other University committees. The elected president holds a graduate assistantship in the Office of the Dean of the Graduate School. Activities include a new student orientation, teaching workshops, special speakers and events, and an annual graduate student research forum.

For more information, call (901) 678-4081, e-mail gsalib@memphis.edu, or refer to the Graduate School homepage at www.people.memphis.edu/~gradsch/

3. Expenses

University Fees and Charges

General: The information in this catalog concerning fees, tuition, deposits, refunds, and the like, is applicable to students enrolled in the Graduate School. It is intended to cover the situations that most students enrolled in the Graduate School will encounter. However, the university may have additional policies and procedures by which fees and charges are implemented or that apply to unusual situations. Similar information for students enrolled in the university's undergraduate colleges and the School of Law is provided in the catalogs of those schools.

All university fees and charges are calculated and assessed consistent with policies and procedures of the Tennessee Board of Regents and the University of Memphis. The listing of any fee or incidental charge in this catalog does not constitute a contract between the university and the student. **Because of rapidly changing conditions, it may be necessary to alter a fee structure before the next edition of the catalog is published.**

As a condition of registration, each student will pay the fees in effect for the semester for which he or she registers. The university will usually collect the amount of fees due at the time of registration fee satisfaction each semester in accordance with the residency classification and fee rates in effect. After all enrollments are complete, any over-collections will be refunded and students will be billed for any under-collections.

AS A RESULT OF PUBLICATION DEADLINE REQUIREMENTS, THE FEES LISTED IN THIS EDITION OF THE CATALOG ARE FOR THE 1998-99 ACADEMIC YEAR. A SLIGHT INCREASE IN ENROLLMENT FEE RATES IS EXPECTED FOR THE 1999-2000 AND 2000-01 ACADEMIC YEARS. THE FINAL, ACTUAL 1999-2000 ACADEMIC YEAR FEES WILL BE PUBLISHED WHEN APPROVED BY THE TENNESSEE BOARD OF REGENTS (AROUND JULY 1, 1999).

Application Fee Information

Each student submitting an application for admission to the Graduate School must pay, at the time of submitting his or her first application, a one-time, nonrefundable fee of \$25.00. International applicants must pay a one-time, nonrefundable application fee of \$50.00.

1998-99 Registration Fee Schedule

RESIDENT (IN-STATE)

Hours	Maintenance Fee	+	Activity Fee	=	Total
1	162	+	4	=	146
2	324	+	8	=	332
3	486	+	12	=	498
4	648	+	16	=	664
5	810	+	20	=	830
6	1,013	+	34	=	1,047
7	1,141	+	34	=	1,175
8	1,269	+	34	=	1,303
9	1,397	+	34	=	1,431
10	1,525	+	34	=	1,559
11	1,557	+	34	=	1,591
12	1,557	+	34	=	1,591

NON-RESIDENT (OUT-OF-STATE)

Hours	Maintenance Fee	+	Out-of-State Tuition	+	Activity Fee	=	Total
1	162	+	213	+	4	=	379
2	324	+	426	+	8	=	758
3	486	+	639	+	12	=	1,137
4	648	+	852	+	16	=	1,516
5	810	+	1,065	+	20	=	1,895
6	1,013	+	1,278	+	34	=	2,325
7	1,141	+	1,491	+	34	=	2,666
8	1,269	+	1,704	+	34	=	3,007
9	1,397	+	1,917	+	34	=	3,348
10	1,525	+	2,130	+	34	=	3,689
11	1,557	+	2,343	+	34	=	3,934
12	1,557	+	2,436	+	34	=	4,027

Registration (Enrollment) Fee Information

Maintenance Fee: Maintenance fees are assessed based on the course level and the number of hours enrolled. The maximum fee amount will be the graduate maximum if a student is enrolled for any graduate level courses. Maintenance fee amounts quoted in the Fee Schedule above include the Debt Service and General Access Fee components.

Tuition: Students classified as out-of-state residents by the Office of Admissions, using regulations provided by the Tennessee Board of Regents (TBR), pay the additional out-of-state tuition indicated in the Fee Schedule above. Residency regulations of the TBR are given at the end of this chapter. Information on appeals procedures is available in the Office of Admissions. **RESIDENCY CLASSIFICATIONS MAY BE CHANGED ONLY BY THE OFFICE OF ADMISSIONS.**

Student Activity Fee: All students enrolled for one to five credit hours pay a student activity fee of \$4.00 per credit hour. All students enrolled for six or more credit hours pay a full-time student activity fee of \$34.00. Students paying the full-time fee are entitled to admission to home athletic events as well as certain health services, concerts, plays, and other student-sponsored activities and social events.

Applied Music Fee: Certain music courses require an additional applied music fee of \$45.00 per semester for each weekly one-half hour lesson. This fee is not included in the Fee Schedule above.

Master Of Business Administration Program (International and Executive Concentrations): All students enrolled in the International MBA concentration are required to pay a matriculation fee of \$3,000 per year. This fee is not included in the fee schedule above. The Executive MBA concentration charges a total program fee of \$10,920 per year for Tennessee residents. Out-of-state residents are charged the current out-of-state tuition rates in addition to the \$10,920 program fee. This program fee covers maintenance fees, tuition, and other expenses of the Executive MBA concentration. The IMBA and EMBA fees are subject to change. For further details contact the Graduate Programs Office at the Fogelman College of Business and Economics (901-678-3721).

Late Registration Fee: A late registration fee of \$25.00 will be assessed to each student who does not complete registration, including the satisfaction of fees, prior to the semester's first day of classes. This fee is not included in the Fee Schedule above.

Auditing Classes: Fees for auditing classes are assessed on the same basis as fees for credit courses. Courses offered between terms, for concentrated periods during a term, or at specific locations may be subject to fees on a per-hour basis only. All questions in regard to fees, fee payments, refunds, and appeals should be directed to the Bursar's Office, Room 176 Administration Building, (901) 678-5579.

Refund Of Registration (Enrollment) Fees

The University adheres to state of Tennessee policy on the refund of student enrollment fees. As such, the following refund percentages of enrollment fees (Maintenance, Out-Of-State Tuition, Applied Music, and Student Activity) apply to students who withdraw from the university or who drop to an hourly load below full time:

- A. **100% Refund:** A full (100%) refund of these fees will be provided (1) until the semester's first day of classes, (2) for courses cancelled by the University, and (3) in the case of the death of the student during the semester.
- B. **75% Refund:** A 75% refund will be provided beginning with the semester's first day of classes and extending for a period of time as noted in the term calendar of the *Schedule of Classes* for each semester.
- C. **25% Refund:** A 25% refund will be provided beginning at the expiration of the 75% refund period and extending for a period of time as noted in the term calendar of the *Schedule of Classes* each semester.
- D. At the conclusion of the 25% refund period, *there will be no refund of these fees.*
- E. Students who receive federal Title IV funds and who withdraw during their first semester of attendance at the University may be eligible for a refund of enrollment fees based on the federal pro-rata refund calculation.

Please note that the specific dates for these refund periods are found in the term calendar of each semester's *Schedule of Classes* and that the refund period ends earlier than the final deadline for dropping a course or withdrawing.

The University's refund policy is based entirely upon the official date of withdrawal or change of course that would result in a refund. **Refunds beyond the specified dates or percentages will not be made** for reasons such as employment conflicts, relocating out-of-town, or other reasons that are beyond the University's control or responsibility.

Registration fee refunds will be processed and mailed to students beginning approximately ten (10) days after classes begin and should usually be completed within four weeks. **The University will offset against proposed refunds any amount owed by the student to the University.**

Other Registration (Enrollment) Fee Information

Summer Semester: The summer semester consists of four separate sessions. Registration (enrollment) fees for the summer sessions are determined solely on a semester-hour basis.

Payment Of University Fees And Charges: Registration (enrollment) fees may be paid by cash, check, money order, Visa/Mastercard/Discover, Financial Aid/ Scholarship Award(s), or University Tiger Fund\$ account. Fees may be paid as soon as the student registers for classes; however, **all registration fees and outstanding debts to the University must be satisfied by the fee payment deadline date** noted in the Fee Payment Section of each term's *Schedule of Classes*. The University offers a deferred (installment) payment plan to

assist students with the payment of enrollment fees for the fall and spring semesters (not available for summer terms). Please refer to the *Schedule of Classes* for complete information.

Returned Checks / Charge Card Drafts: It is expected that any check or credit card draft given to the University for any reason will be honored by the bank on which it is drawn. Any check or draft dishonored by the bank on which it is drawn may be presented a second time at the discretion of the University. A \$20.00 returned item fee will be assessed for any check/draft returned.

The privilege of making payments to the university by personal check and check cashing privileges will be revoked for any student who has had more than one returned check/draft within a twelve-month period. The suspension of this privilege will be for a period of one year from the date the last item is redeemed.

A student will not be permitted to satisfy registration fees by check if **ANY** previous check used for payment of registration fees has been returned unpaid. **Students on this NO CHECKS status must be prepared to satisfy registration fees with cash, cashier's check, or by an authorized/approved credit card draft.**

Indebtedness To The University: Policy of the Tennessee Board of Regents prohibits the enrollment of any person who owes the University any amount of money. All outstanding financial obligations to the University must be satisfied before a student will be allowed to register for courses. Tennessee law prohibits the release of grades, transcripts, or diplomas of any person who has outstanding financial obligations to the University.

Academic Common Market: Participation in the Academic Common Market provides qualified students from various southern states with the opportunity to pay in-state enrollment fees while pursuing certain degree programs at the University of Memphis. See page 11 for a full description of this program.

Totally Disabled Persons And Persons Over 60 Years Of Age: Persons who are domiciled in Tennessee and (1) have a permanent disability that totally incapacitates them from the potential to work at an occupation that brings them an income or (2) will become 60 years of age or older during the academic semester in which they begin classes may AUDIT courses at the University of Memphis without paying maintenance fees, tuition charges, student activity fees, access fees, or registration fees. Admission to AUDIT courses will be limited according to space availability on an individual classroom basis.

Persons who are totally disabled and those who will become 65 years of age or older during the academic semester in which they begin classes and who are domiciled in Tennessee may enroll for credit courses at the cost of one-half (1/2) the normal per credit hour fee, not to exceed a maximum of \$75.00 per semester. University Health Services shall examine certification of permanent disability (not the applicant) and determine the eligibility of the applicant under this legislation.

Inquiries concerning these programs may be addressed to Student Information Services, 119 Administration Building.

Student Housing

Residence Halls: Charges for rooms in University residence halls are indicated below (1998-99 rates; subject to change for 1999-2000). For information concerning application for rooms, contact the Office of Residence Life (901) 678-2295.

Application Procedures: Applications for residence hall space may be obtained from the Office of Residence Life, The University of Memphis, Memphis, TN, 38152. Because spaces are

allocated by date of receipt and home address, completed applications accompanied by the required \$100 application/reservation deposit should be returned to the Office of Residence Life as soon as possible. Checks or money orders should be made out to The University of Memphis. Please do not send cash.

Receipt by the Office of Residence Life of the Housing application and \$100 check or money order, however, does not guarantee admission to the University or to a residence hall. **The Director of Residence Life reserves the right to refuse any housing application, to change or cancel any assignment, or to terminate a resident's occupancy, for justifiable cause.**

Contract Period and Conditions: Fall assignment/ contracts are for the full academic year (fall and spring semesters). Fall residents wishing to petition for release from their contract for the spring semester must do so in writing by November 1. Residents who cancel after this date, but prior to claiming their key for the spring semester, will forfeit 50% of their application/reservation deposit. Residents who fail to cancel by the close of the check-in period will forfeit the entire \$100 deposit. The application/reservation deposit, once submitted with the application, covers your initial term of occupancy and all subsequent terms of occupancy and continues until such time as it is cancelled in writing. There will be no penalty if written cancellation is received prior to the published deadline for any specific contract period.

Residents claim and vacate their rooms according to directions issued by the Department of Residence Life. Returning and new residents will have claimed their spaces if any or all of the following procedures have occurred: (1) receiving the room key during the check-in period, (2) paying residence hall rent in full or in part by the end of the check-in period, (3) returning the signed contract with the rental payment.

Cancellation Policy: Full deposit and pre-payment of rent will be refunded if: (1) the institution is notified by the following cancellation deadlines for the first semester in which the contract is in force: July 1—fall residents; December 1—new spring residents; May 1—summer residents; (2) the student is prevented from entering the University because of personal medical reasons confirmed in writing by a licensed physician; (3) residence hall space is not available; or (4) if the applicant has not been assigned to a room at the time written cancellation is received by Residence Life; or (5) the student is denied admittance or re-admittance to the University. Full refund will be made in the case of death. Fall residents wishing to petition for release from their contract for the spring semester must do so in writing by November 1. **No refunds will be made for other than the above conditions.**

Assigned applicants who fail to cancel by the deadline referred to in (1) above but cancel before the close of the check-in period will forfeit 50% of their deposit. Assigned residents who fail to cancel by the close of the check-in period will forfeit their entire deposit. (This is applicable to both the fall and spring semesters.)

Refund of Residence Hall Rent: Refunds of residence hall rent after registration will be prorated on a weekly calendar basis when the student is forced to withdraw from the residence halls: (1) because of personal medical reasons confirmed by a licensed physician in writing, or (2) at the request of the institution for other than disciplinary reasons. Full refund will be made in the case of death.

For reasons other than those stated above, the following procedure shall apply: 75% of fees will be refunded for withdrawal from the residence halls for a period of approximately 14 calendar days beginning with and inclusive of the first official day of classes or within an equivalent period for a

short-term course. 25% of fees will be refunded following expiration of the 75% period, for a period of time extending approximately 25% of the time covered by the term. The periods during which refunds of 75% or 25% will be made are exactly the same as the periods during which the same refund percentages are made for maintenance fees. **No refunds will be made for other than the above conditions.**

1998-99 Residence Hall Rates:

Dormitory	Room Type	Semester Rate***
Mynders	Double*	885
	Small Single*	1185
	Medium Single*	1230
	Large Single*	1270
	Large Single**	1295
Rawls	Double	945
	Single	1355
Richardson Towers N	Double*	1015
	Single*	1445
Richardson Towers S	Double*	1015
	Single*	1445
Robison	Double	945
	Single	1355
Smith	Double	945
	Single	1355
West	Double	945
	Single	1355
South	Double	1060
	Single	1500
Student Housing Complex	Apartment	1710
	Townhouse	1655

* Semi-Private Bath

** Private Bath

*** Fees quoted are for 1998-99 Academic Year and are subject to change.

Student Family Housing: Student Family Housing is located on the South Campus approximately one mile from the main campus. Phase One consists of 56 one-bedroom townhouse apartments, 62 two-bedroom townhouse apartments, and 8 two-bedroom flats. All apartments are equipped with stove, refrigerator, garbage disposal, living room carpet, and venetian blinds. Electric central heat and air are also provided. An enclosed private patio is located to the rear of each apartment. The new Phase Two consists of 24 two-bedroom flats. These apartments are equipped with stove, frost-free refrigerator, garbage disposal, dishwasher, venetian blinds, thermal pane windows, hook-ups for stackable washers and dryers, and carpet for living room and bedrooms. Gas central heat and air are also provided. Each apartment has a patio/balcony with locking storage area. Four apartments are specifically designed for physically disabled students.

Application forms may be obtained from the Office of Residence Life in Room 011, Richardson Towers. A \$100 application/reservation deposit is required when the application is submitted.

Miscellaneous Fees

Automobile Registration: Every vehicle parked on campus property must have a university parking permit (hangtag)

properly displayed. A permanent parking permit, which provides access to the university's general parking areas, is issued to students upon their initial enrollment at the university. There is no additional charge to students for their initial general parking permit (or general parking permit validation sticker issued each subsequent semester the student enrolls and satisfies registration fees). Students will be charged a \$10.00 fee for the replacement of their permanent parking permit. Students may also request access to university reserved, resident, or priority (gate access) parking areas which require payment of a parking fee between \$21.00 and \$110.00, depending on the level of parking desired.

Credit By Examination Or Placement Examination: The fee for taking an examination for credit or a placement examination is \$60.00 minimum and an additional \$15.00 for each hour over three (3) per course. These fees are non-refundable and must be paid prior to the examination.

Dissertation: A student completing the doctorate will be required to pay the \$7.50 fee for binding each copy of the dissertation and a fee of \$60.00 to defray the cost of microfilming the dissertation and publishing the abstract. A minimum of three copies are required and the student should consult with the department chair or dissertation adviser as to the number of actual copies required.

Meals: The university cafeterias, food service locations, and vending areas, open to all students, provide wholesome food at reasonable prices. The cost of meals per student is estimated to be approximately \$3,400 per academic year.

Music Locker / Instrument Rental: Music students are required to have a locker for storage of university-owned musical instruments or equipment. Personal instruments may also be stored in these lockers. A music instrument rental fee of \$25.00 is required. Students will be expected to pay for any damages.

Thesis: Students will be required to present a receipt from the Bursar's Office to the Graduate School showing that they have paid a fee of \$7.50 for each thesis which is to be bound. A maximum of four copies will be bound. Students should consult with their department chair and/or thesis adviser as to the number of copies required.

Appeal Procedures (Fees And Refunds)

Any individual may appeal the assessment, application, calculation, collection, or interpretation of any University fee, charge, deposit, or refund. The University has developed the following processes for an appeal:

Traffic Fines/Citations: Traffic fines and citations may be appealed through a separate process on forms available from the Parking Office, Office of Judicial Affairs, or the Student Government Association Office.

Residence Life: Appeals related to Residence Life financial matters should be filed first with the Office of Residence Life for review within their process. Decisions of the Office of Residence Life may be appealed in writing to the Office of the Associate Vice President for Finance.

All Other University Fees/Charges, Refunds, etc.: A written appeal of all other financial matters should be filed first on forms available in the Bursar's Office, 176 Administration Building. Decisions of the Bursar's Office may be appealed in writing to the Office of the Associate Vice President for Finance. The Bursar's Office will forward any appeals which they cannot address to the Office of the Associate Vice President.

The Office of the Associate Vice President for Finance will provide a decision in writing of those matters appealed to that

office. This decision may be appealed to the University Fee/Refund Appeals Committee. The recommendation of the Committee will be forwarded to the Vice President for Business and Finance for a final decision, which will conclude the university's appeal process.

University ID Cards

The University of Memphis issues each student an identification card that bears the student's image and social security number. There is no charge to the student for the initial University ID card. All students should obtain this permanent identification card, which is used as the primary campus-wide method of determining privileges and accesses permitted to each student.

The University identification card remains the property of The University of Memphis and should be surrendered upon the request of a University official. A student may possess only ONE University identification card at any time.

Students may obtain a replacement for a lost, stolen, or damaged University identification card in 171 Administration Building, between the hours of 7:30am-6:00pm Monday-Thursday, or 7:30am-4:30pm Friday. Students will be charged a \$10.00 fee to replace a lost or stolen card. A charge of \$2.00 will be made to change any data on a card.

Tiger Fund\$

A personal **Tiger Fund\$** account, which is accessed through the student's University ID card, is also available to all students at The University of Memphis. **Tiger Fund\$** is a declining balance money management program that allows students a convenient way to obtain supplies and services on campus without the need to carry cash or the inconvenience of paying by check or credit card.

Tiger Fund\$ are accepted at numerous campus locations, including the University Store, Health Center, and campus food service locations. **Tiger Fund\$** are even accepted at various vending machines on campus for added convenience.

Your personal **Tiger Fund\$** account can be activated by making a deposit at the Bursar's Office cashier's windows, 177 Administration Building. Additional information on University ID cards and the advantages and convenience of having your own personal **Tiger Fund\$** account may be obtained from the ID Card Office in 171 Administration Building or by calling the ID Card Office at 678-3028.

Residency Classification

All determinations concerning the classification of students as in-state or out-of-state for fee purposes are made in the Office of Graduate School Student Services. The determinations are based on regulations and guidelines of the Tennessee Board of Regents (see below). If, for any reason, there is a question about a student's state residency classification for fee payment purposes, the student is responsible for requesting a review of his/her residency status **before** classes begin.

Intent

The public institutions of higher education in the State of Tennessee shall apply uniform rules, as described in these regulations, in determining whether students shall be classified "in-state" or "out-of-state" for fees and tuition purposes and for admission purposes.

Definitions

- (1) "Public higher educational institution" shall mean a university or community college supported by appropriations made by the Legislature of this State.
- (2) "Residence" shall mean continuous physical presence and maintenance of a dwelling within this State, provided that absence from the State for short periods of time shall not affect the establishment of a residence.
- (3) "Domicile" shall mean a person's true, fixed, and permanent home and place of habitation; it is the place where he or she intends to remain, and to which he or she expects to return when he or she leaves without intending to establish a new domicile elsewhere.
- (4) "Emancipated person" shall mean a person who has attained the age of eighteen years, and whose parents have entirely surrendered the right to the care, custody, and earnings of such person and who no longer are under any legal obligation to support or maintain such deemed "emancipated" person.
- (5) "Parent" shall mean a person's father or mother. If there is a non-parental guardian or legal custodian of an unemancipated person, "parent" shall mean such guardian or legal custodian; provided, that there are not circumstances indicating that such guardianship or custodianship was created primarily for the purpose of conferring the status of an in-state student on such unemancipated person.
- (6) "Continuous enrollment" shall mean enrollment at a public higher educational institution or institutions of this State as a full-time student, as such term is defined by the governing body of said public higher educational institution or institutions, for a normal academic year or years of the appropriate portion or portions thereof since the beginning of the period for which continuous enrollment is claimed. Such person need not enroll in summer sessions or other such inter-sessions beyond the normal academic year for his or her enrollment to be deemed "continuous." Enrollment shall be deemed continuous notwithstanding lapses in enrollment occasioned solely by the scheduling of commencement and/or termination of the academic years, or appropriate portion thereof, of the public higher educational institutions in which such person enrolls.

Rules for Determination of Status

- (1) Every person having his or her domicile in this State shall be classified "in-state" for fee and tuition purposes and for admission purposes.
- (2) Every person not having his or her domicile in this State shall be classified "out-of-state" for said purposes.
- (3) The domicile of an unemancipated person is that of his or her parent.
- (4) The domicile of a married person shall be determined independent of the domicile of the spouse.

Out-of-State Students Who Are Not Required to Pay Out-of-State Tuition

- (1) An unemancipated, currently enrolled student shall be reclassified out-of-state should his or her parent, having theretofore been domiciled in the State, remove from the State. However, such student shall not be required to pay out-of-state tuition nor be treated as an out-of-state student

for admission purposes so long as his or her enrollment at a public higher educational institution or institutions is continuous.

- (2) An unemancipated person whose parent is not domiciled in this State but is a member of the armed forces and stationed in this State or at Fort Campbell pursuant to military orders shall be classified out-of-state, but shall not be required to pay out-of-state tuition. Such a person, while in continuous attendance toward the degree for which he or she is currently enrolled, is not required to pay out-of-state tuition if his or her parent thereafter is transferred on military orders.
- (3) Part-time students who are not domiciled in this State but who are employed full-time in the State, or who are stationed at Fort Campbell pursuant to military orders, shall be classified out-of-state but shall not be required to pay out-of-state tuition.
- (4) Military personnel and their spouses stationed in the State of Tennessee who would be classified out-of-state in accordance with other provisions of these regulations will be classified out-of-state but shall not be required to pay out-of-state tuition. This provision shall not apply to military personnel and their spouses who are stationed in this State primarily for educational purposes.

Presumption

Unless the contrary appears from clear and convincing evidence, it shall be presumed that an emancipated person does not acquire domicile in this State while enrolled as a full-time student at any public or private higher educational institution in this State, as such status is defined by such institution.

Evidence to be Considered for Establishment of Domicile

If a person asserts that he or she has established domicile in this State he or she has the burden of proving that he or she has done so. Such a person is entitled to provide to the public higher educational institution by which he or she seeks to be classified or reclassified in-state, any and all evidence which he or she believes will sustain his or her burden of proof. Said institution will consider any and all evidence provided to it concerning such claim of domicile but will not treat any particular type or item of such evidence as conclusive evidence that domicile has or has not been established.

Appeal

The classification officer of each public higher educational institution shall be responsible for initially classifying students "in-state" or "out-of-state." Appropriate procedures shall be established by each such institution by which a student may appeal his or her initial classification.

Effective Date for Reclassification

If a student classified out-of-state applies for in-state classification and is subsequently so classified, his or her in-state classification shall be effective as of the date on which reclassification was sought. However, out-of-state tuition will be charged for any semester during which reclassification is sought and obtained unless application for reclassification is made to the classification officer on or before the last day of regular registration of that quarter or semester.

4. Degree Programs and Courses

The College of Arts and Sciences

RALPH FAUDREE, Ph.D.,
Dean

LINDA A. BENNETT, Ph.D.,
Associate Dean for Graduate Studies and Research
and Director of Graduate Programs

<http://artsci.memphis.edu>

GRADUATE ACADEMIC PROGRAMS

Department	Major	Concentration Within Major	Degree Offered
Anthropology	Anthropology	(1) Urban Anthropology (2) Medical Anthropology (3) Archaeology	Master of Arts (M.A.)
Biology	Biology		Master of Science (M.S.) Doctor of Philosophy (Ph.D.)
Chemistry	Chemistry	(1) Inorganic (2) Computational (3) Analytical Chemistry (4) Organic (5) Physical Chemistry	Master of Science (M.S.) Doctor of Philosophy (Ph.D.)
Criminology and Criminal Justice	Criminal Justice		Master of Arts (M.A.)
English	English	(1) Language and Linguistics (2) Literature (3) Writing (a) Creative (b) Professional (4) English as a Second Language	Master of Arts (M.A.)
	Creative Writing		Master of Fine Arts (M.F.A.)
Foreign Languages and Literatures	Romance Languages	(1) French (2) Spanish	Master of Arts (M.A.)
Geography and Planning	Geography		Master of Arts (M.A.) Master of Science (M.S.)
	City and Regional Planning		Master of City and Regional Planning (M.C.R.P.)
Geological Sciences	Geological Sciences	(1) Geology (2) Geophysics	Master of Science (M.S.)
	Geophysics		Doctor of Philosophy (Ph.D.)
History	History		Master of Arts (M.A.) Doctor of Philosophy (Ph.D.)
Mathematical Sciences	Mathematical Sciences	(1) Applied Mathematics (2) Mathematics (3) Statistics (4) Computer Science	Master of Science (M.S.)
		(1) Mathematics (2) Applied Statistics (3) Computer Science	Doctor of Philosophy (Ph.D.)
Microbiology and Molecular Cell Sciences	Biology	(1) Microbiology (2) Molecular Cell Sciences	Master of Science (M.S.) Doctor of Philosophy (Ph.D.)
Philosophy	Philosophy		Master of Arts (M.A.) Doctor of Philosophy (Ph.D.)
Physics	Physics		Master of Science (M.S.)
Political Science	Political Science		Master of Arts (M.A.)
	Public Administration	(1) Urban Management and Planning (2) General Public Administration (3) Health Services Administration (4) Human Resource Administration	Master of Public Administration (M.P.A.)
	Health Administration		Master of Health Administration (M.H.A.)
Psychology	Psychology	General Psychology	Master of Science (M.S.)
	School Psychology		Master of Arts (M.A.)
	Psychology	(1) Clinical Psychology (2) Experimental Psychology (3) School Psychology	Doctor of Philosophy (Ph.D.)
Sociology and Social Work	Sociology		Master of Arts (M.A.)

The College of Arts and Sciences contains fifteen departments, each of which offers graduate degrees. Candidates for each of these degrees must pursue a curriculum plan which has the approval of their major advisor, the department chair, and the Graduate Dean. Every graduate student is expected to comply with the general requirements of the Graduate School (see Section 2 of this *Bulletin*) and the program requirements of the degree being pursued (see departmental listings in this section).

Individual program requirements described in the Graduate School Issue of the 1999-2001 *Bulletin of The University of Memphis* are subject to change. Please consult your department or the Office of the Graduate School for changes that may occur before publication of the next issue of this *Bulletin*; or consult the Graduate School website at: <http://www.people.memphis.edu/~gradsch> for annual catalog updates.

Master's Degrees

The programs for the **MASTER OF ARTS** degree are generally open to those who have completed the Bachelor of Arts degree. Those with a Bachelor of Science degree may enroll in these programs if undergraduate prerequisites are met. Students majoring in the following areas may pursue the Master of Arts degree: Anthropology, Criminal Justice, English, Geography, History, Philosophy, Political Science, Psychology, Romance Languages, and Sociology (see departmental listings).

The **MASTER OF FINE ARTS IN CREATIVE WRITING** is a 48-semester-hour program for students who plan to pursue a career in fiction writing or poetry. Admission to the program is based primarily on a portfolio of work in the student's chosen genre. The course work includes both literature and writing classes, and culminates with submission of a publishable collection of fiction or poetry as the thesis.

The program for the **MASTER OF PUBLIC ADMINISTRATION** is generally open to students with preparation in the social sciences or in business courses. Students working toward this inter-disciplinary degree complete a core curriculum in public administration courses and a concentration in one of the following areas: General Public Administration, Health Services Administration, Human Resource Administration, Urban Management and Planning, and Nonprofit Administration. (See listing for Political Science).

The **MASTER OF HEALTH ADMINISTRATION** is a 48-semester-hour program for those interested in managerial and administrative careers in the health care community.

The programs for the **MASTER OF SCIENCE** degree are generally open to students with a science background. Students enrolled in the following areas may pursue the Master of Science degree: Biology, Chemistry, Geography, Geological Sciences, Mathematical Sciences, Microbiology and Molecular Cell Sciences, Physics, and Psychology (see departmental listings).

The **MASTER OF CITY AND REGIONAL PLANNING** is a professional degree for students interested in government and business careers. Students complete the following: a core curriculum of 30 semester hours; a 15-hour elective curriculum with possible subjects in economic development planning, urban design, land use and transportation planning, planning information systems, housing and community development, planning law, and environmental planning; and a 3-hour Capstone Project that integrates one or more elective subjects with the core curriculum.

Doctor of Philosophy Degree

The Doctor of Philosophy Degree is offered in the following departments within the College of Arts and Sciences: Biology, Chemistry, Geological Sciences, History, Mathematical Sciences, Microbiology and Molecular Cell Sciences, Philosophy, and Psychology. General requirements for the Ph.D. Degree are outlined in these departmental listings. More detailed information about prerequisites, course work, research requirements, etc., may be obtained from the chair or graduate coordinator of the respective departments. Any of these departments may choose to admit a student to doctoral study without requiring the master's degree as a prerequisite.

Anthropology

DAVID H. DYE, Ph.D., *Chair*
Room 316, Manning Hall

STANLEY E. HYLAND, Ph.D.,
Coordinator of Graduate Studies
(901) 678-2080

E-mail: shyland@memphis.edu
www.people.memphis.edu/~anthropology/

MEMBERS

- LINDA A. BENNETT, *Professor*
Ph.D. (1976), American University [1999]
DAVID H. DYE, *Associate Professor*
Ph.D. (1980), Washington University [2003]
RUTHBETH FINERMAN, *Associate Professor*
Ph.D. (1985), University of California at Los Angeles [2004]
STANLEY E. HYLAND, *Associate Professor*
Ph.D. (1977), University of Illinois, Urbana-Champaign [2000]
CHARLES WILLIAMS, JR., *Associate Professor*
Ph.D. (1981), University of Illinois [2000]

ASSOCIATE MEMBERS

- THOMAS W. COLLINS, *Professor*
Ph.D. (1971), University of Colorado [2001]
SATISH KEDIA, *Assistant Professor*
Ph.D. (1997), University of Kentucky [2004]
ELLEN SHLASKO, *Assistant Professor*
Ph.D. (1997), Yale University [2004]
GERALD SMITH, *Associate Professor*
Ph.D. (1971), University of Missouri [2003]
JOHN D. WINGARD, *Assistant Professor*
Ph.D. (1992), Pennsylvania State University [2003]

I. The Department of Anthropology offers a Master of Arts degree with a major in Anthropology with the purpose of training students as competent practicing anthropologists in the fields of multiethnic community organization, health care delivery systems, cultural resource management and service in archaeology.

II. Concentrations are available in Urban Anthropology, Medical Anthropology, and Public Archaeology. Each student will plan his or her program in consultation with his or her major adviser.

III. M.A. Degree Program

A. Program Admission

Admission to both the Graduate School and the department is required. To meet departmental requirements for admission, students must submit a letter of intent, three letters of recommendation, and complete the GRE. In addition to their undergraduate academic record, applicants will be considered on the basis of their GRE scores, work experience and career plans as described in the letter of intent. Except in exceptional circumstances, students should have a 3.0 undergraduate record and at least 450 scores in each of the verbal and quantitative GRE categories.

Admission to the program is not automatic upon meeting minimum departmental admission requirements. Students are selected from the pool of qualified applicants and the number selected depends on the availability of financial aid and adequate faculty supervision.

Note: Deadline for completion of submission is April 1 for the following fall semester and November 13 for the following spring semester. Summer school admission must be completed by May 1 for entrance into the Graduate School and the departmental program. Field school admissions (only) will be accepted until May 15. Late submissions may, in exceptional circumstances, be considered on an individual basis, but will normally be deferred to the following semester.

B. Program Requirements

1. A total of 30 semester hours course work plus satisfactory performance in a practicum (Anthropology 7985—6 hours credit) for a total of 36 semester hours.
2. Satisfactory completion of the core curriculum (14 hours).
3. Satisfactory completion of track-specific requirements (6 hours).
4. At least 70% of the program (i.e. 26 hours) must be taken at the 7000 level.
5. Satisfactory performance on a comprehensive exam.
6. The Master's Degree in Anthropology is an interdisciplinary degree and students are encouraged to take up to 9 semester hours of their work outside of the Department of Anthropology, depending upon their area of interest and the nature of previous work experience.

ANTHROPOLOGY (ANTH)

- 6020. Visual Archiving in Anthropology. (3).** Anthropological use of photography as a research tool. Emphasis on anthropological field museum, and laboratory photography. NOTE: Prospective students are advised to obtain a list of course expenses from the Anthropology Department before registering. PREREQUISITE: ART 2701 or permission of instructor.
- 6051. Anthropology and Education. (3).** Advanced study of the cultural transmission process with emphasis on identifying differing behavioral, cognitive and learning styles of various ethnic groups within American society and selected third world countries. Encounters of U.S. subcultural groups with the public education system. PREREQUISITE: Permission of instructor.
- 6065. Contemporary Anthropological Theory. (3).** Contemporary growth of theories and methods in anthropology. PREREQUISITES: ANTH 1100 and 1200; or permission of instructor.
- 6111. Human Adaptations (3).** Examines the physical and cultural adaptations of humans in an ecological context. Information from primate studies, the archaeological record and studies of contemporary societies. Ecological context of physical adaptations, cultural adaptations, language, social organization. PREREQUISITE: ANTH 1100, 1200 or permission of instructor.
- 6120. Africa's New World Communities. (3).** Survey of African-American cultures in the New World emanating from 17th and 18th century slave trade; focus on African Diaspora; Caribbean, Central America, South America, and North America.
- 6200. Ecological Anthropology. (3).** Critical examination of concepts for ecological analysis of formation, maintenance, and change of human groups. Draws on the archaeological record and contemporary studies to examine interactions between cultures and environments. PREREQUISITE: ANTH 1100, 1200 or permission of instructor.
- 6220. Human Dimensions of Natural Resource Management. (3).** Role of culture in the use and management of natural resources. Discusses how societies construct knowledge about nature and attribute value to it. Examines how indigenous knowledge, alternative value systems, and traditional management strategies influence policy decisions at the local, national, and international levels. PREREQUISITE: ANTH 4200 or permission of instructor.
- 6251. Psychological Anthropology. (3). (6751).** Examines the relationship between culture and personality; cross-cultural comparison of perspectives on cognition, mental illness, ethnopsychiatry and ethnotherapies.
- 6252. Economic Anthropology. (3).** Comparative analysis of economic systems and their functional relationships to other aspects of culture; cultural constructions of wealth, value, property.
- 6253. Anthropology of Religion. (3).** Comparative analysis of religious systems and their functional relationships to other cultural institutions; interrelations of myth, magic, and ritual; types of religious institutions and religious practitioners.
- 6255. Applied Anthropology and Development. (3).** Cross-cultural review of processes of change, grassroots development and planning in industrialized world; models of change, specializations in applied anthropology, and development of public policy on international issues of housing, education, health, and economic development.
- 6301. Archaeology of North America. (3).** Description and distribution of prehistoric cultural remains in North America and Meso America. Major regional sequences, extending from the earliest evidences of human occupation until historic times.
- 6325. Archaeological Field Techniques. (3).** Field excavation, specimen preparation, use of survey instruments and photography, map making and archaeological record keeping. May be repeated for maximum of 6 hours credit. PREREQUISITE: permission of instructor.
- 6326. Archaeological Laboratory Techniques. (3).** Methods and techniques in archaeological laboratory analysis. Emphasis on organization and supervision of laboratory procedures. PREREQUISITE: Permission of instructor.
- 6333. Archaeological Site Reconnaissance. (3).** Field course to provide basic understanding of applied archaeology including governmental Phase I, Phase II research. Site survey, site mapping, surface collections, site testing, and rapid site assessment. PREREQUISITE: permission of instructor.
- 6336. Native Peoples of the Mid-South. (3).** Archaeology and ethnology of the Southeast; intensive study of various North American cultures of Tennessee and bordering states. PREREQUISITE: ANTH 1100, 1200 or permission of instructor.
- 6360. Environmental Reconstruction. (3).** Advanced study of cultural ecology in past environmental regimes. Emphasis on interdisciplinary approach to extinct social systems and their relationship with the environment.
- 6370. Historic Archaeology. (3).** Review of the contributions of archaeologists to historical research. The methods and techniques of archaeologists as required and modified by the excavation and interpretation of historic materials. The allied specialties unique to Historic Archaeology including documentary investigations and the conservation and restoration of existing structures.
- 6380. Museums in Society. (3).** (Same as ARTH 6380). History of museums and how they function in society; development of major collections and centers of research and education and as interpreters of social values.
- 6382. Professional Practices in Museums. (3).** (Same as ARTH 6382). Basic aspects of museum organization, management, exhibit planning and execution, and maintenance of collections and records.
- 6390. Archaeology. (3).** Introduction to basic archaeological concepts. Topics include history of archaeology; theory, methodology, techniques and research strategies.
- 6411. Urban Anthropology. (3).** Anthropological studies of pre-industrial and industrial cities. Urbanization, movements of social transformation and other processes of adjustment to an urban milieu. Urban slums, ethnic enclaves, and housing developments in cross-cultural perspective. Urban and social kinship and social organization. Urban community development. Urban research techniques.
- 6412. Neighborhood Development and Poverty. (3).** Role of various institutions and their relationship to developmental needs of inner-city neighborhoods; evolution of American cities as context for understanding urban neighborhoods and poverty; government and foundations in shaping policy; neighborhood associations and nonprofits; role of the anthropologist in contributing to a better understanding of neighborhoods and various intervention strategies particularly in the Mid South.
- 6413. Anthropology of Tourism. (3).** Cultural dynamics and dilemmas of tourism and tourist development; tourism assessed in terms of impacts on the host culture, tourists, and the environment; also assessed as development alternative, driver of cultural change, and form of local, regional, national, international, and intercultural relations.
- 6414. Comparative Work and Production Systems. (3).** Advanced study of changes in work units and production systems beginning with early industrial capitalism, evolving through stages of integrated mass production, and finally the current restructuring of a global system; focus on flexible mass production, involvement of the periphery, workplace innovation, international labor migration, and human resource development. Prerequisites: ANTH 1200 or ANTH 3282.

6420. American Folklore. (3). Selected genres of American folklore, including folk religion and belief, folk medicine, folksong and music, narrative and humor (jokes and riddles). Comparisons to other cultures. Emphasis on role of folklore in maintenance of tradition, in social change, and in concept of culture.

6511. Medical Anthropology. (3). Cross-cultural analysis of bio-behavioral components of infectious, nutritional, genetic, chronic and psychiatric diseases. Individual and cultural reactions to medical care, professionals and health care delivery systems.

6531. Alcohol, Culture, and Biology. (3). Cross-cultural comparison of beliefs, rituals, and meaning of alcohol consumption and alcoholism; examination of biological and cultural evidence for development of alcohol-related problems; implications for prevention, early intervention, and treatment.

6541. Nutritional Anthropology. (3). Cross-cultural comparison of human diet; assessment; cultural and health value of foods; hunger and malnutrition; acculturation and dietary change.

6551. Culture and Childbirth. (3). Review of biological, environmental, social and cultural factors influencing human reproduction; comparison of individual, community and clinical approaches to fertility, birth control, pregnancy, birth and post-partum care; evaluation of alternative delivery systems in Western and non-Western societies.

6561. Cultural Context of Deviant Behavior. (3). Review of perceptions of normality in different societies, cultural definitions of and responses to deviance, promotion and discouragement of inappropriate behavior; evaluation of mental illness, violence, drug abuse, cannibalism, suicide, sexual practices and everyday behavior in relation to cultural definitions of normality.

6840. Israel: Antiquity in Modernity. (3). (Same as JDST 6840). Interdisciplinary examination of relationship between ancient traditions and modern issues in Israel. Emphasis on relationship between historical conditions, conflicts, and interconnections and new choices facing Israel.

6841. Biblical Archaeology. (3). (Same as JDST 6841). Relationship between historical texts in Hebrew Bible and historical evidence from archaeological research in Israel and surrounding area. Emphasis on how archaeological evidence and Biblical narratives illuminate each other.

†7001. Internship for Graduate Assistants. (1-3). Supervision of and consultation with anthropology graduate assistants. May be repeated. Prerequisite: Limited to anthropology majors; approval of graduate coordinator.

†7002. Reading for Comprehensives. (1-3). Arranged on individual basis for anthropology graduate students only. May be repeated. Prerequisite: Limited to anthropology majors; approval of graduate coordinator.

†7003. The Anthropology Profession. (1-3). Presentations relating to profession of college teaching, including methods and means of research and publication in different fields of anthropology. May be repeated. PREREQUISITE: Permission of graduate coordinator.

†7004. Teaching Skills for Graduate Assistants. (1-3). Overview and practical demonstrations of art of teaching anthropology. May be repeated. PREREQUISITE: Limited to anthropology majors; permission of graduate coordinator.

†7005. Workshop in Professional Development for Graduate Assistants. (1-3). Research design, practice, and methodology in professional writing in anthropology; specific emphasis on practicum proposal preparation. May be repeated. PREREQUISITE: Limited to anthropology majors; permission of graduate coordinator.

†7006. Skills for Research/Proposal Preparation. (1-3). Research design, practice, and methodology in professional writing in anthropology; specific emphasis on practicum proposal preparation. May be repeated.

†7007. Anthropological Field Trips. (1-3). Travel to regional neighborhoods, communities, and archaeological sites; may include cultural, geological, and physiographical areas of the Mid-South; specific emphasis on visual examination of social, cultural, and biophysical environment and preparation of field notebooks. May be repeated. PREREQUISITE: Limited to anthropology majors; permission of graduate coordinator.

7075-8075. Methods in Anthropology. (4). Critical examination of field methods and research designs in selected areas of anthropology. Major trends in contemporary anthropological research as a preparation for applied research. PREREQUISITE: Non-majors must have permission of instructor.

7076-8076. Techniques of Anthropological Data Analyses. (4). Construction and analysis of data bases developed from ongoing anthropological projects; review of frequently used statistical techniques in anthropological literature, hypothesis testing, and methods of presentation. PREREQUISITE: ANTH 7075 or permission of instructor; non-majors must have permission of instructor.

7100-8100. Seminar in Biocultural Anthropology. (3). Topics include principles of human genetics, the biological and cultural aspects of race, the hereditary and environmental factors in modern human variation, medical and nutritional anthropology. PREREQUISITE: Non-majors must have permission of instructor.

7200-8200. Seminar in Cultural Anthropology. (3). Topics include the nature of culture and its various aspects including language, social organization, economics, technology, the development of civilization, and the process of urbanization. PREREQUISITE: Non-majors must have permission of instructor.

7310. Archaeological Theory and Method. (3). History of archaeology and development of conceptual framework for archaeological data collection and interpretation; current theories and methods including use of allied specialties.

7311. Public Archaeology. (3). Roles and responsibilities of the archaeologist in contract and salvage work, in museum research and administration, and in the public dissemination of archaeological information. A review of relevant state and federal legislation.

7315. Chiefdoms. (3). Intensive study of chiefdom societies based on ethnohistoric and archaeological data.

7321. Archaeological Field Analysis. (3). Methods of dealing with archaeological field problems; individual instruction in collection, recording, and field analysis of both historic and prehistoric archaeological data.

7380-89. Special Topics in Archaeology. (3-6). Topics in Public Archaeology. No more than six hours may be counted toward degree requirements in Anthropology.

7390-99. Special Topics in Museology. (1-3). Topics in site interpretation/museology. No more than six hours may be counted toward degree requirements in Anthropology.

7411. Urban Anthropology In the Mid-South. (3). Discussion and analysis of community economic development in the Mid-South region from prehistoric to present time; inter-relationship of cultural values, regional social structures and political economy in terms of international and national industrial trends.

7490-99. Special Topics in Urban Anthropology. (3). Topics of special interest in Urban Anthropology. No more than six hours may be counted toward a degree in Anthropology.

7511. Anthropology of Health Care Professions. (3). Roles of the various health professions in the delivery of medical care with emphasis on the perception of these roles by racial or ethnic groups in the Mid-South. Lectures by medical professionals and administrators.

7521-8521. Biocultural Epidemiology. (3). Concepts and research uniting epidemiology and medical anthropology; explores epidemiologic web of agent, host, and environment in disease; stresses interplay of sociocultural, behavioral, and environmental risk factors; examines applications of epidemiology theory and methods to medical anthropology and global health policy.

7590-99. Special Topics in Medical Anthropology. (3). Topics in Medical Anthropology. No more than six hours may be counted toward degree requirements in Anthropology.

7970. Directed Individual Writing. (1-3). Intensive guided study of original data in areas selected by advanced students and accepted by the instructor. Preparation of manuscripts for publication. PREREQUISITE: Permission of instructor.

7975-8975. Directed Individual Readings. (1-3). Intensive guided study in areas selected by advanced students and accepted by the staff. PREREQUISITE: Permission of staff.

7980-8980. Directed Individual Research. (1-3). Intensive guided study of original data in areas selected by advanced students and accepted by the staff. Preparation for publication. **PREREQUISITE:** Permission of chair and the designated staff.

†7985. Anthropological Applications. (3, 6). Supervised practical experience in the application of anthropological principles in an agency or facility appropriate to urban, medical and nutritional anthropology, mental health or archaeology.

†Grades of S, U, or IP will be given

Biology

JERRY O. WOLFF, Ph.D., *Chair*
Department of Biology
 Room 103, Ellington Biology Building
 (901)-678-2581

E-mail: jwolff@cc.memphis.edu
www.people.memphis.edu/~biology/

MEMBERS

KENNETH BRUCE DAVIS, *Professor*
 Ph.D. (1970), Louisiana State University [2000]
 MICHAEL H. FERKIN, *Assistant Professor*
 Ph.D. (1988), Boston University [2001]
 SCOTT FRANKLIN, *Assistant Professor*
 Ph.D. (1996) Southern Illinois University [2003]
 JACK W. GRUBAUGH, *Assistant Professor*
 Ph.D. (1994), University of Georgia [2000]
 WILLIAM GUTZKE, *Associate Professor*
 Ph.D. (1984), Colorado State University [2000]
 MICHAEL L. KENNEDY, *Professor*
 Ph.D. (1975), University of Oklahoma [2000]
 KURT J. MAIER, *Assistant Professor*
 Ph.D. (1990), University of California at Davis [2000]
 S. REZA PEZESHKI, *Professor*
 Ph.D. (1982), University of Washington [2000]
 BILL A. SIMCO, *Professor*
 Ph.D. (1966), University of Kansas [2000]
 JERRY O. WOLFF, *Professor*
 Ph.D. (1977), University of California-Berkeley [2004]

ASSOCIATE MEMBERS

MELVIN BECK, *Professor*
 Ph.D. (1974), University of Arkansas [2002]
 CHARLES J. BIGGERS, *Professor*
 Ph.D. (1969), University of South Carolina [2000]
 JAMES PAYNE, *Professor*
 Ph.D. (1968), Mississippi State University [2000]

ADJUNCT MEMBERS

WILLIAM BALTOSSER
 Ph.D. (1984), New Mexico State University [2001]
 JOSEPH J. BARRETT
 DVM (1983), University of Tennessee [2000]
 WILLIAM H. BENSON
 Ph.D. (1984), University of Kentucky [1999]
 TROY L. BEST
 Ph.D. (1976), University of Oklahoma [2000]
 CHARLES A. BRADY
 Ph.D. (1982), Ohio University [2001]
 RONALD K. CHESSER
 Ph.D. (1981), University of Oklahoma [2001]
 STEVEN M. COHAN
 Ph.D. (1969), Pennsylvania State University [2000]
 GEORGE A. GALE
 Ph.D. (1995), University of Connecticut [2000]
 CHERYL A. GOUDIE
 Ph.D. (1984), Auburn University [2001]
 GARY A. HEIDT
 Ph.D. (1969), Michigan State University [2001]

ALLAN E. HOUSTON

Ph.D. (1991), University of Tennessee [2001]
 JAMES A. HUGGINS
 Ph.D. (1985), Memphis State University [2001]
 JOHN B. IVERSON
 Ph.D. (1977), University of Florida [2000]
 ALAN JASLOW
 Ph.D. (1982), University of Michigan [2001]
 PHYLLIS K. KENNEDY
 Ph.D. (1985), Memphis State University [2000]
 DAVID H. KESLER
 Ph.D. (1979), University of Michigan [2000]
 REBECCA LOCHMANN
 Ph.D. (1993), Texas A&M University [2000]
 DON H. ORR
 M.S. (1973), Louisiana State University [2000]
 MAZIN B. QUMSIYEH
 Ph.D. (1986), Texas Tech University [2001]
 DANIEL SCHLENK
 Ph.D. (1989), Oregon State University [2000]
 JEFFREY SILVERSTEIN
 Ph.D. (1993), University of Washington [2001]
 HOWARD H. THOMAS
 Ph.D. (1982), Northeastern University [2000]
 RONALD VAN DEN BUSSCHE
 Ph.D. (1989), Texas Tech University [1999]
 CARL F. WATSON
 Ph.D. (1988), Northeast Louisiana University [2001]
 MATT R. WHILES
 Ph.D. (1995), University of Georgia [2000]
 WILLIAM R. WOLTERS
 Ph.D. (1981), Purdue University [2000]

I. The Department of Biology offers the Master of Science and Doctor of Philosophy degrees with a major in Biology. Potential students should refer to the Department's Graduate Student Handbook for further information.

II. M.S. Degree Program

A. Program Admission

1. An overall minimum grade point average of 2.75 (on a 4.0 scale) at the undergraduate level.
2. Scores for the general and Advanced Biology portions of the Graduate Record Examination. A minimum of 500 on both the verbal and quantitative portions of the general component of the GRE is usually competitive. A score in at least the upper 50th percentile in the GRE Biology subject test is usually expected.
3. Two letters of recommendation.
4. All undergraduate deficiencies in science courses for a BS in Biology at The University of Memphis must be removed prior to completion of the program

B. Program Requirements (Thesis)

1. A minimum of 30 semester hours beyond the baccalaureate degree is required.
2. Biology 7000, 7004, 7600, and 7996. Attendance at departmental seminars is mandatory. Biology 7000 must be completed during the first year of residence; and Biology 7600 in the last semester.
3. The maintenance of a grade point average of 3.0. Continuation of a student who makes a "2.0" or below is at the discretion of the student's Advisory Committee.
4. Pass a written examination covering subject matter designated by the advisory committee. The test will be administered once each semester and during the summer term on a date published by the department.
5. Presentation of research (7600) and a thesis (7996) as approved by the student's Advisory Committee.
6. Pass a final oral examination.

C. Program Requirements (Non-thesis)

1. A minimum of 36 semester hours of graduate courses is required. The total number of semester hours required for graduation will be determined by the student's Advisory Committee based on academic background. No more than 3 semester hours can be satisfied by Biology 7092.
2. Biology 7004. Attendance at departmental seminars is mandatory.
3. The maintenance of a minimum grade point average of 3.0. Continuation of a student who makes a "2.0" or below is at the discretion of the student's Advisory Committee.
4. Pass a final written and oral examination which will be administered by the student's Advisory Committee during the final semester of residence.

III. Ph.D. Degree Program

A. Program Admission

1. The prospective doctoral student must normally hold a master's degree from a recognized institution. However, a student may petition for an optional program leading directly to the Ph.D.

2. All students will be required to submit satisfactory scores for the Aptitude and Advanced Placement Test of the Graduate Record Examination with application to enter the Graduate School. A minimum of 550 on both the verbal and quantitative portion of the GRE is usually expected. In addition, a score in at least the upper 50th percentile in the GRE Biology subject test is usually expected.
3. Two letters of recommendation; a potential major professor must be identified prior to acceptance.
4. A personal interview with departmental personnel.
5. Students applying for the optional program leading from a BS directly to the Ph.D must have a 3.5 G. P. A.

B. Program Requirements

1. *Course Requirements*—Biology 8000, 8004, 8200, 8600, and 9000. Attendance at departmental seminar is mandatory. Biology 8000 or an equivalent must have been completed by the end of first year of residence. A minimum of 3 academic years (72 semester hours) beyond the baccalaureate degree is required. A minimum of 30 semester hours (including 18 semester hours of Biology 9000 Research and Dissertation) must be taken in residence.
2. *Foreign Language and Research*—Students are required to demonstrate competence in foreign language or research tool areas, or both. This requirement will be determined by each student's Advisory Committee.
3. *Comprehensive Examination and Candidacy*—After a minimum of two years in residency, the graduate student may take the written and oral comprehensive examination in his or her major area. Admission to candidacy will be recommended to the Graduate School by the student's committee upon satisfactory completion of any language requirement, course work, comprehensive examination, and acceptance of the dissertation project.
4. *Dissertation and Research Prospectus*—A dissertation will be required of all candidates for the doctoral degree. A minimum of eighteen (18) hours of research and dissertation credit must be completed during the graduate program. The dissertation must show a mastery of the techniques of scientific research, and it must be a distinct and new contribution to the body of scientific knowledge. The student's committee must approve the topic, prospectus and the final dissertation.
5. A minimum of two published or fully accepted papers in refereed scientific journal(s) approved by the dissertation committee are required.
6. *Final Examination*—The final examination will be conducted by the chair of the student's committee. The committee will consist, insofar as possible, of the same persons involved in the comprehensive examinations. The final examination will be an oral defense of the dissertation and will be announced and open to the public. Upon successful completion of the examination and all degree requirements, the committee will recommend awarding the Ph.D.

BIOLOGY (BIOL)

- 6002. Toxicology.** (3). Effects of foreign substances on biological mechanisms; absorption, excretion, metabolism, and transformation of potentially harmful substances. *Three lecture hours per week.* PREREQUISITES: CHEM 3312 and an upper division physiology course.
- 6050. Field Technique in Ecology.** (4). Applied ecology covering practical training in forest, field, aquatic, and atmospheric sampling and analysis. Extended field trips. *Two lecture, four laboratory hours per week.* PREREQUISITE: Consent of instructor.
- 6053. Plant Ecology.** (4). Relationships of plants and environmental factors at physiological, population, and community scales; ecosystem dynamics at local and landscape scales; emphasis on field techniques. *Two lecture, four laboratory hours per week.* PREREQUISITE: BIOL 3050.
- 6054. Wetland Ecology.** (4). Wetlands and wetland resources; attributes of hydrology, biogeochemistry and wetland plants with emphasis on bottomland hardwood forests. *Two lecture, four laboratory hours per week.* PREREQUISITE: BIOL 3050 and consent of instructor.
- 6055. Ecological and Environmental Issues.** (3). Ecological perspective on current environmental issues such as conservation and biodiversity, global climatic change, and regulation of chemicals in the environment. *Three lecture hours per week.* PREREQUISITE: BIOL 3050 or consent of instructor.
- 6060. Limnology.** (4). Physical and chemical attributes of lakes, ponds and streams; organisms of fresh water; problems of production; laboratory work emphasizes Tennessee lakes, and practical training in limnological methods and identification of organisms. *Two lecture, four laboratory hours per week.* PREREQUISITE: One year of chemistry.

6100. Evolution. (3). Synthesis of principles and concepts of modern evolutionary theory; geological evolution, biological evolution, and evolution of societies; emphasis on recent developments and current controversies.

6604. Ethology. (4). Animal behavior, primarily from ecological, physiological, developmental, and evolutionary perspective. *Three lecture, two laboratory hours per week.*

6620. Vertebrate Histology. (4). Microscopic study of normal tissues and organs of the vertebrate body. *Three lecture, four laboratory hours per week.* PREREQUISITE: BIOL 3610 or 3620 or permission of instructor.

6630. General Endocrinology. (3). Anatomy and physiology of the organs of internal secretion; role of hormones in metabolism and development. *Three lecture-demonstration hours per week.* PREREQUISITE: An upper division physiology course.

6640. Ornithology. (4). Biology of birds, with emphasis on avian anatomy, physiology, behavior, and reproductive biology. Field trips emphasize identification of local species and techniques of field study. *Two lecture, four field/laboratory hours per week.*

6644. Ichthyology. (4). Fishes, with special emphasis upon the kinds which occur in Tennessee; collection, preservation and identification; life histories, management, and economic importance of fishes. *Two lecture, four laboratory hours per week.*

6651. Field Techniques In Vertebrate Zoology. (4-6). Techniques in extended field study of vertebrates outside the local area. Credit hours to be determined in consultation with instructor.

6740. Mammalogy. (4). Classification, distribution, life histories, economic importance, techniques of field study, methods of collection and preservation of mammals. *Two lecture, four laboratory hours per week.*

6744. Herpetology. (4). Classification, distribution, life histories, techniques of collection and preservation, natural habitats of North American reptiles and amphibians. *Two lecture, four laboratory hours per week.*

6840. Invertebrate Zoology. (4). Invertebrate phyla with emphasis on phylogeny, embryology, and ecology of selected groups. Extended field trip. *Two lecture, four laboratory hours per week.*

6900. Entomology. (4). Morphology, physiology, behavior and ecology of insects. *Three lecture, two laboratory hours per week.*

6930. Insect Physiology. (4). Physiology as applied to the life processes of insects. *Two lecture, four laboratory hours per week.*

†7000-8000. Orientation to Graduate Studies. (2). Source of literature in field of biology, data presentation, graphic techniques and manuscript preparation. *One lecture, two laboratory hours per week.*

7001-8001. Field and Laboratory Techniques in Ecotoxicology. (3). Field and laboratory techniques that evaluate fate and effects of contaminants in ecosystems; environmental distribution and analytical considerations, bioaccumulation and toxicity, laboratory bioassays, community level analyses. *One lecture, four laboratory hours per week.* PREREQUISITE: Permission of instructor.

7002-8002. Ecotoxicology. (3). Pollutants in ecosystems; environmental fate and distribution, cycling, bioaccumulation, bioavailability, transfer, laboratory and field toxicity evaluations, and environmental risk assessment of contaminants in aquatic and terrestrial systems; toxicology integrated with environmental chemistry, physiology, ecology and public policy. *Three lecture hours per week.* PREREQUISITE: Permission of instructor.

7003-8003. Fate of Chemicals In the Environment. (3). Physical, chemical, and biological behavior of chemicals in the environment; distribution and fate of natural and xenobiotic contaminants in water, soil, and air; simple models for describing and predicting how chemicals behave in the environment. *Three lecture hours per week.* PREREQUISITE: Permission of instructor.

†7004-8004. College Biology Teaching. (1). (Same as MMCS 7004-8004). Under faculty supervision, graduate students participate in teaching of laboratory sections of existing undergraduate courses in the biological sciences (MMCS or BIOL). Student's performance evaluated by faculty member in charge and appropriate grade assigned. Only one credit hour applicable to degree requirements.

†7005-8005. Ethics in Science. (2). Discussion of ethical principles associated with research in science including use of organisms in scientific research. Designed for graduate students who intend to pursue career in research. *Two lecture hours per week.*

†7006-8006. Care and Humane Use of Laboratory Animals. (2). (Same as MMCS 7006-8006). Care and use of live vertebrate animals in research and teaching. Students must enroll in this course before working with live vertebrate animals; fulfills requirements of Federal Animal Welfare Act and NIH Guide. *One lecture and two laboratory hours per week.* PREREQUISITE: Permission of instructor.

7010-8010. Principles and Methods of Systematic Biology. (3). Systematic philosophies and numerical methods developed to deal with systematic and taxonomic problems. Discussions of international rules, concept of species, and the roles and aims of practicing systematists. Projects designed to give practical experience in analyzing data. *Two lecture and two laboratory hours per week.*

7015-8015. Aquaculture. (3). Principles and procedures related to the culture of commercially important freshwater organisms under controlled conditions. *Three lecture hours per week.*

7070-8070. Cytogenetics. (4). Current theories concerning the nature of the gene and the mechanisms of recombination and mutation. Chromosome aberrations and their genetic behavior. *Three lecture, two laboratory hours per week.* PREREQUISITE: BIOL 3072.

†7092-8092. Research. (1-6). Consultation, reading, and laboratory work investigating selected topics in biology. Formal paper with review of literature and results of investigation required. Only four semester hours credit may be counted toward degree requirements.

7100-8100. Advanced Topics in Evolution. (3). Current concepts and controversies in evolutionary theory. *Three lecture hours per week.* PREREQUISITE: Permission of instructor.

7130-8130. Comparative Animal Physiology. (4). Analysis of the physiological mechanisms of animal adaptation and their relevance to evolution, distribution and survival in diverse environments. *Two lecture, four laboratory hours per week.* PREREQUISITES: An upper division course in physiology and organic chemistry.

7250-8250. Community and Landscape Ecology. (4). Distributions of organisms on worldwide and local basis with emphasis on factors influencing distribution and growth. *Two lecture, four laboratory hours per week.* PREREQUISITE: BIOL 3050 or consent of the instructor.

†7600. Seminar in Biology. (1). (Same as MMCS 7600). Selected topics in the biological sciences. Credit is earned when the results of the student's thesis work is presented. PREREQUISITE: BIOL 7200.

7610-8610. Environmental Effects on Development. (2). Environment-gene interactions and developmental plasticity; evolutionary, physiological, morphological, and ecological consequences of these interactions. *Two lecture hours per week.*

7700-20-8700-20. Special Topics in Biology. (1-4). Current topics of special interest in biology. PREREQUISITE: Permission of instructor.

7750-8750. Population Ecology. (4). Examination and quantification of the processes that influence population dynamics. *Two lecture and four laboratory hours per week.* PREREQUISITES: BIOL 3050.

7751-8751. Conservation Biology. (4). Application of biological principles towards the conservation of natural systems and the organisms they contain. *Two lecture and four laboratory hours per week.* PREREQUISITE: Permission of the instructor.

†7996. Thesis. (1-6). (Same as MMCS 7996).

†8200. Seminar in Biology. (1). (Same as MMCS 8200). Selected topics in biological sciences. Credit is earned when a seminar on the dissertation problem and research is presented to the department during the second year of the doctoral program.

†8600. Seminar in Biology. (1). (Same as MMCS 8600). Selected topics in biological sciences. Credit is earned when the student presents the public oral defense of his/her dissertation research. PREREQUISITE: BIOL 8200.

†9000. Doctoral Research and Dissertation. (1-10). (Same as MMCS 9000). The dissertation must be an independent research project applying a mastery of the techniques of scientific research. It must be a distinct and new contribution to the body of scientific knowledge. Minimum total of 18 hours is required.

***The courses listed below are taught at the Gulf Coast Research Lab, Ocean Springs, Mississippi. The University of Memphis residence credit is given through affiliation with the laboratory.**

***6010. Aquaculture. (6).** Technology, principles, and problems relating to the science of aquaculture; emphasis on culture of marine

species. PREREQUISITES: 16 hours of zoology including invertebrate and vertebrate zoology or ichthyology.

***6020. Comparative Histology of Marine Organisms. (1-6).** Histological organization of representative marine organisms. Fixation, processing, and study of tissues using light microscopy, transmission and scanning electron microscopy. Structural changes and physiological changes during life cycle of organism including histopathology. PREREQUISITES: Permission of instructor.

***6051. Marine Ecology. (5).** Relationship of marine organisms to their environment, effects of temperature, salinity, light, nutrient concentration, currents, food, and competition on abundance and distribution of marine organisms. PREREQUISITES: 16 hours of biology including general zoology, general botany, and invertebrate zoology.

***6052. Salt Marsh Plant Ecology. (4).** Botanical aspects of local marshes. Plant identification, composition, structure, distribution, and development of coastal marshes. Biological and physical interrelationships. Primary productivity and relation of marshes to estuaries and associated fauna. PREREQUISITES: General botany, plant taxonomy, plant physiology, and general ecology or consent of instructor.

***6200. Marine Botany. (4).** Local examples of the principal groups of marine algae and maritime flowering plants, treating structure, reproduction, distribution, identification and ecology. PREREQUISITE: Ten hours of biology, including introductory botany, or consent of instructor.

***6300. Coastal Vegetation. (3).** General and specific aspects of coastal vegetation, with emphasis on local examples. PREREQUISITES: 10 hours of biology, including general botany.

***6500. Marine Microbiology. (5).** Role of microorganisms in the overall ecology of the oceans and estuaries. PREREQUISITES: General microbiology and environmental microbiology or consent of instructor.

***6600. Marine Vertebrate Zoology and Ichthyology. (6).** Marine Chordata, including lower groups and the mammals and birds, with most emphasis on the fishes. PREREQUISITES: 16 hours of zoology including comparative anatomy or consent of the instructor.

***6610. Early Life History of Marine Fishes. (4).** Reproductive strategies and developmental processes of marine fishes. Temporal and spatial distribution patterns, population dynamics, and ecological interactions of fish eggs and larvae. Methods of sampling and identifying eggs and larvae. PREREQUISITES: Ichthyology, fisheries biology, ecology, and/or consent of instructor.

***6646. Marine Fisheries Management. (4).** Overview of practical marine fishery management problems. PREREQUISITES: Consent of instructor.

***6700. Behavior and Neurobiology of Marine Animals. (4).** Behavior, neuroanatomy, and neurophysiology of marine animals; emphasis on the neural mechanisms underlying behavior of selected invertebrates, fishes, birds and mammals. PREREQUISITES: 16 hours of zoology and or psychology or consent of instructor.

***6800. Marine Invertebrate Zoology. (6).** Important freeliving, marine and estuarine invertebrates of Mississippi Sound and adjacent continental shelf of northeastern Gulf of Mexico; emphasis on structure, classification, phylogenetic relationships, larval development and functional processes. PREREQUISITES: 16 hours of zoology including introductory invertebrate zoology.

***6844. Parasites of Marine Animals. (6).** Parasites of marine animals with emphasis on morphology, taxonomy, life histories and host parasite relationships. Lecture, laboratory and field work. PREREQUISITES: General parasitology or consent of the instructor.

***6850. Fauna and Faunistic Ecology of Tidal Marshes. (4).** Taxonomy, distribution, trophic relationships, reproductive strategies and adaptation of tidal marsh animals; emphasis on those occurring in northern Gulf marshes. PREREQUISITES: 16 hours of biology and junior standing or consent of instructor.

†*7093. Problems In Zoology. (3-6). Supervised research on specific problems in marine zoology for graduates. PREREQUISITE: BIOL 6800 or 6600.

†Grades of S, U, or IP will be given

Chemistry

PETER K. BRIDSON, Ph.D., *Chair*
Room 210, J.M. Smith Building

ROGER V. LLOYD, Ph.D., *Coordinator of Graduate Studies*
(901)-678-2621

E-mail: rlloyd@memphis.edu
www.chem.memphis.edu/umchem.html

MEMBERS

- PETER K. BRIDSON, *Associate Professor*
Ph.D. (1978), University of London [2000]
TED BURKEY, *Associate Professor*
Ph.D. (1982), University of California at Berkeley [2004]
THOMAS R. CUNDARI, *Associate Professor*
Ph.D. (1990), University of Florida [2004]
CHHABIL DASS, *Associate Professor*
Ph.D. (1984), University of Nebraska at Lincoln [2000]
HENRY A. KURTZ, *Professor*
Ph.D. (1977), University of Florida [2001]
YING-SING LI, *Professor*
Ph.D. (1968) University of Kansas [2004]
ROGER V. LLOYD, *Associate Professor*
Ph.D. (1971), Carnegie-Mellon University [2004]
DANIEL A. LOWY, *Assistant Professor*
Ph.D. (1996), West Virginia University [2003]
ABBY L. PARRILL-BAKER, *Assistant Professor*
Ph.D. (1996), University of Arizona [2004]
PARTHA S. RAY, *Assistant Professor*
Ph.D. (1982), University of East Anglia, England [1999]

ASSOCIATE MEMBERS

- LARRY WAYNE HOUK, *Professor*
Ph.D. (1967), University of Georgia [2001]
HOWARD GRADEN KIRKSEY, *Professor*
Ph.D. (1966), Auburn University [2000]
RICHARD L. PETERSEN, *Associate Professor*
Ph.D. (1975), University of Wisconsin - Milwaukee [2004]
CHARLES NELSON ROBINSON, *Professor*
Ph.D. (1953), University of Tennessee [2000]

ADJUNCT MEMBERS

- PEIXIN HE
Ph.D. (1985), University of Illinois at Urbana-Champaign [2000]
ROY SIMMONS
Ph.D. (1987), University of New Orleans [2000]

I. The Department of Chemistry offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees with a major in chemistry. Concentrations are available in analytical, computational, inorganic, organic, and physical chemistry. Related courses may be taken in other departments including physics, mathematics, geology, biology, and engineering and in fields other than the student's major within the Department of Chemistry.

II. M.S. Degree Program

A. Program Admission and Prerequisites

Prospective students, in addition to meeting the requirements for admission to The Graduate School, are required to present as a prerequisite for admission a satisfactory record of undergraduate work in chemistry; normally 32 semester hours of chemistry will be required, including quantitative analysis, organic, and physical chemistry. Students who are deficient in undergraduate work may be admitted and the deficiencies removed without graduate credit.

B. Program Requirements

- Diagnostic Examinations**—Before registering for the first time, incoming graduate students will take a series of standardized examinations, one each in inorganic, analytical, organic, and physical chemistry. The examinations are at a level equivalent to completion of the following undergraduate courses at the University of Memphis: CHEM 4111 (inorganic), 3211 (analytical), 3312 (organic), and 3412 (physical). A candidate for the Master of Science degree must make at least 50th percentile on three of these tests or take the equivalent classes (CHEM 6111, 6211, 6311, 6411). Students should note that a score of 75th percentile on the test or a 3.0 or better in the course is prerequisite to higher level graduate courses in each area.

- Course Work Requirements**—The thirty semester hour total required is subject to the following restrictions.

- No more than nine hours of credit at the 6000 level may be counted towards the Master of Science degree. At least nine hours must be in courses numbered CHEM 7100-7599, with at least two areas of chemistry represented.
 - A maximum of six semester hours of Chemistry 8000 (Research and Dissertation/Thesis) and/or Chemistry 9000 (Doctoral Research and Dissertation) can be applied to the thirty semester hour requirement.
 - A maximum of three semester hours of Chemistry 7910/8910 (Special Problems in Chemistry) may be counted toward the thirty semester hour requirement.
 - Presentation (CHEM 7911) is required of all graduate students. A maximum of four semester hours from some combination of CHEM 6911, 7911, and 7/8913 (Seminar) may be used to meet the thirty semester hours required.
 - A maximum of six semester hours credit can be granted for graduate courses successfully completed at other accredited institutions.
- Cumulative Examinations**—The student must begin the cumulative examinations by the beginning of the third semester and take up to eight consecutive tests. These are described in the summary of the administration of the graduate program. A student pursuing the master's degree must obtain a total of at least six points. Any student who has not amassed six points at the completion of eight tests is automatically terminated from the Master's degree program. Written permission from the student's advisory committee is required to delay beginning the tests or to delay continuing once the student has begun taking tests.
 - Seminar**—Participation in seminar is required during each semester of residence (excluding summer terms). Each student is required to present at least one formal seminar before graduation.
 - The Advisory Committee**—Upon admission to the Graduate School, the student will be advised by the Department's Graduate Studies Committee. A student must choose a major professor before the end of the second semester following enrollment. The major professor, in consultation with the student, will recommend to the department chair faculty members to be appointed to the student's advisory committee. This committee, which is appointed as soon as the student has selected a major professor, must be composed of at least three members, with the major professor serving as chair. Upon appointment, the committee will review the student's progress to date and outline an appropriate program tailored to the student's individual interests to permit fulfillment of the degree requirements.

6. Thesis Option

- Research Prospectus**—After selecting the research problem on which the thesis is to be based, the student will prepare a Research Prospectus to be presented orally to the Advisory Committee in an open meeting, and in a written form to the Graduate Studies Committee. The prospectus must be presented before the end of the second year.
 - Thesis**—Each student must submit a thesis acceptable to the student's advisory committee. The thesis can be based on work done for CHEM 8000 or 9000, for which a maximum of six credit hours can be applied to the degree requirement.
- Non-Thesis Option**—If a non-thesis program is selected, a student must prepare a detailed report in the form of a review or proposal, based on literature research. Three hours credit for CHEM 7910 will be earned.
 - Comprehensive Examination**—A final oral examination on the student's thesis or report and related material will be administered by the student's advisory committee after completion of all other requirements. This examination will be held seven or more days after the student has distributed copies of the thesis or report to the members of the advisory committee, which must be done at least one month before the end of the semester in which the student expects to graduate. If the final oral examination is unsatisfactory it must be repeated within one year; it may not be repeated more than once.
 - Retention**—A student pursuing the Master's degree program may be terminated for any of the following reasons.
 - Failure to maintain a grade point average of 3.0 or above. A student who has a cumulative grade point average below 3.0 will be placed on probation. Continuation in graduate school must be approved by the Dean of the Graduate School. Any person whose continuation is denied may appeal the decision to the University Council for Graduate Studies and Research.
 - Failure to accumulate the requisite number of points on the departmental cumulative examinations (See Section 3).
 - Failure to complete the degree requirements within six years of initial enrollment in the graduate program.
 - Failure to satisfy the advisory committee on the final oral examination (See Section 8).

III. Ph.D. Degree Program

A. Program Admission

See M.S. admission requirements.

B. Program Requirements

- Diagnostic Examinations**—Before registering for the first time, incoming graduate students will take a series of standardized examinations, one

each in inorganic, analytical, organic, and physical chemistry. The examinations are at a level equivalent to completion of the following undergraduate courses at the University of Memphis: CHEM 4111 (inorganic), 3211 (analytical), 3312 (organic), and 3412 (physical). A doctoral candidate must make at least 50th percentile on all of these tests or take the equivalent classes (CHEM 6111, 6211, 6311, 6411). Students should note that a score of 75th percentile on the test or a 3.0 or better in the course is prerequisite to higher level graduate courses in each area.

2. *Course Work Requirements*—The doctoral degree program includes the requirement of the satisfactory completion of a minimum of 72 semester hours of graduate credit. The 72 hour total is subject to the following restrictions:
 - a. No more than fifteen hours of credit at the 6000 level may be counted toward the doctoral degree. At least twelve hours must be in courses numbered CHEM 7100-7599 (8100-8599), with at least two areas of chemistry represented.
 - b. A maximum of 30 hours credit for CHEM 8000 (Research and Dissertation/Thesis) and CHEM 9000 (Doctoral Research and Dissertation) combined can be applied toward the 72 hour total.
 - c. A maximum of 12 hours of CHEM 7/8910 (Special Problems in Chemistry) may be credited toward the total hour requirement.
 - d. A maximum of 12 hours of course work may be included in a field related to chemistry (physical or biological sciences, mathematical sciences, or engineering). Courses taken in related areas must be numbered 6000 or above.
 - e. Presentation (CHEM 7911) and Advanced Presentation (CHEM 8911) are required. A maximum of four semester hours from some combination of CHEM 6911, 7911, 8911, and 7/8913 may be used to meet the 72 semester hour requirement.
 - f. A maximum of 30 hours of graduate course credit completed at the university or other accredited institution (including credit applied on an M.S. degree) may be applied to the 72-hour requirement subject to the approval of the student's advisory committee and the Department's Graduate Studies Committee. A minimum of 18 hours in graduate courses other than CHEM 7/8910, CHEM 7/8913, and CHEM 8/9000 must be completed at the university.
3. *Residence*—Of the total semester hour requirement, a minimum of 24 hours must be earned while the student is at The University of Memphis. This requirement cannot be met wholly by attendance at Summer Sessions, and must include at least one academic year of full-time student status.
4. *Cumulative Examinations*—The student must begin the cumulative examinations by the beginning of the third semester and take up to eight consecutive tests. These are described in the summary of the administration of the graduate program. A student pursuing the doctoral degree must obtain a total of at least twelve points. Any student who has not amassed twelve points at the completion of eight tests is automatically terminated from the doctoral degree program. Written permission from the student's advisory committee is required to delay beginning the tests or to delay continuing once the student has begun taking tests.

Students who enter the Ph.D. program and already hold the M.S. degree in chemistry must begin taking the cumulative examinations at the first opportunity after initial enrollment if a satisfactory score is made on the diagnostic examinations.
5. *Seminar*—Participation in Seminar is required during each semester of residence (excluding summer terms). A maximum of three semester hours of credit for CHEM 7/8913 is allowable toward the 72 semester hours required for graduation. Each student is required to present at least one formal seminar before graduation.
6. *The Advisory Committee*—Upon admission to the Graduate School, the student will be advised by the Department's Graduate Studies Committee. A student must choose a major professor from the graduate faculty before the end of the second semester following enrollment. The major professor, in consultation with the student, will recommend to the department chair faculty members to be appointed to the student's Advisory Committee. This committee, which is appointed as soon as the student has selected a major professor, must be composed of at least five members, with the major professor serving as chair. Of the members of this committee, at least one is to be from a different area of specialization than that in which the student intends to work. Upon appointment, the committee will review the student's progress to date and outline an appropriate program tailored to the student's interests to enable fulfillment of the degree requirements.

A student who enters the Ph.D. program and already holds the M.S. degree in chemistry must select a major professor during the first semester in residence, or upon completion of the diagnostic examinations.

In the event that a student changes major professors, a new Advisory Committee must be appointed.
7. *Admission to Candidacy*—In order to apply for candidacy, the student must have an Advisory Committee, must have taken the Graduate Record Examinations, and must have successfully completed the departmental cumulative examination requirement. The cumulative examinations collectively are considered to be equivalent to the qualifying examination required by the Graduate School. The test scores, transcripts, and other pertinent data will be examined by the student's Advisory Committee, and their recommendation, with the approval of

the Department Chair, will be forwarded to the Dean of the Graduate School.

8. *Research Prospectus*—After selecting the research problem on which the dissertation is to be based, the student will prepare a Research Prospectus to be presented orally to the Advisory Committee in an open meeting, and in a written form to the Graduate Studies Committee. The Research Prospectus must be presented before the end of the second year.

A student who enters the Ph.D. program having previously obtained the M.S. degree in chemistry is required to present a Research Prospectus before the completion of two semesters. A student who changes major professors must present a new Research Prospectus within one semester after the change is made.
9. *Doctoral Research and Dissertation*—Registration for nine semester hours of CHEM 9000 and CHEM 8000 combined is required of all doctoral candidates before the dissertation will be considered.
10. *Comprehensive Examination*—A final oral examination on the student's dissertation and related material will be administered by the student's Advisory Committee after completion of all course requirements and the dissertation. This examination will be held two weeks or more after the student has distributed copies of the dissertation to the members of the Advisory Committee; which must be done at least five weeks before the end of the semester in which the student expects to graduate. If the final oral examination is unsatisfactory, it must be repeated within one year. It may not be repeated more than once.
11. *Retention*—A student pursuing the doctoral degree program may be terminated for any of the following reasons:
 - a. Failure to maintain a grade point average of 3.0 or above. A student who has a cumulative grade point average below 3.0 will be placed on probation. Continuation in graduate school must be approved by the Dean of the Graduate School. Any person whose continuation is denied may appeal the decision to the University Council for Graduate Studies and Research.
 - b. Accumulation of more than six hours of graduate credit with grades of C (2.0) or below.
 - c. Failure to accumulate the requisite number of points on the departmental cumulative examinations. (See Section 4).
 - d. Failure to satisfy the Advisory Committee on the final oral examination. (See Section 11).

CHEMISTRY (CHEM)

6001. Environmental Chemistry. (3). Chemical phenomena occurring in soil, atmospheric, and aquatic environments; consideration of natural resources and environment. *Three lecture hours per week.* PREREQUISITE: CHEM 3311.

6101. Inorganic Chemistry Laboratory. (1). Experimental techniques of inorganic synthesis and physical methods for characterization of inorganic and organometallic compounds. *Three laboratory hours per week.* PREREQUISITE or COREQUISITE: CHEM 6111.

6111. Inorganic Chemistry. (3). Theoretical and applied inorganic chemistry. Stress on the relationship of structure and bonding to the properties of elements and compounds. Topics include introductory molecular orbital theory, coordination compounds and organometallics, ligand field theory, nonaqueous solvent systems, and reaction mechanisms. *Three lecture hours per week.* PREREQUISITE: CHEM 3412, or permission of the instructor

6180-99. Special Topics in Inorganic Chemistry. (1-3). Topics are varied and announced in *Schedule of Classes*.

6201. Instrumentation Laboratory. (2). Laboratory exercises applying topics introduced in CHEM 6211: measurement of signals, enhancement of signal-to-noise, fundamentals of electronics, applications of solid-state electronic devices, and the role of computers in data acquisition. *Six laboratory hours per week.* COREQUISITE: CHEM 6211.

6211. Advanced Instrumental Analysis. (3) Study of topics in analytical instrumental analysis, including atomic spectroscopy, x-ray spectroscopy, UV-visible, luminescence, infrared, Raman, and nuclear magnetic resonance spectroscopy. *Three lecture hours per week.* PREREQUISITE: CHEM 3211 and CHEM 3412.

6280-99. Special Topics in Analytical Chemistry. (1-3). Topics are varied and announced in *Schedule of Classes*.

6311. Intermediate Organic Chemistry. (3). Further study of physical organic chemistry, spectrometric methods of identification of organic compounds, modern methods for organic synthesis, and natural products chemistry. PREREQUISITE: CHEM 3312 or permission of instructor.

6315. Organic Medicinal Chemistry. (3). Introduction to principles of medicinal chemistry; structure, synthesis, and biochemical mecha-

nism of action of major drug classes. *Three lecture hours per week.* PREREQUISITE: CHEM 3312.

6380-99. Special Topics in Organic Chemistry. (1-3). Topics are varied and announced in *Schedule of Classes*.

6411. Advanced Physical Chemistry. (3). Advanced topics in physical chemistry, including statistical mechanics and thermodynamics plus selected topics in kinetic theory of gases, condensed phases, and non-equilibrium processes. PREREQUISITE: CHEM 3412 or permission of instructor.

6415. Computational Chemistry. (3). Application of computers to problems in organic and inorganic chemistry; use of quantum chemistry codes to solve problems related to electronic, molecular, and vibrational structure.

6480-99. Special Topics in Physical Chemistry. (1-3). Topics are varied and announced in *Schedule of Classes*.

6501. Biochemistry Laboratory. (2). (Same as MMCS 6503). Investigation of physical and chemical properties of compounds of biological interest by common laboratory techniques. Assay of enzymes and enzyme kinetics are stressed. *Three laboratory hours per week.* PREREQUISITES: CHEM 3302 or 3303 and CHEM 3312. PREREQUISITE OR COREQUISITE: CHEM 6511.

6502. Biochemistry Laboratory II. (2). (Same as MMCS 6504). Biochemical laboratory techniques; emphasis on fractionating biological samples and measuring metabolic activity. *Three laboratory hours per week.* PREREQUISITE: CHEM 6511.

6511. Biochemistry. (3). (Same as MMCS 6511). Chemistry of amino acids and proteins as related to their properties in biochemical systems. Enzymology, including kinetics and conformation studies. Coenzymes and their functions. The chemistry of carbohydrates, lipids and nucleotides. PREREQUISITE: CHEM 3312.

6512. Biochemistry. (3). (Same as MMCS 6512). A continuation of CHEM 6511. Metabolism of carbohydrates, amino acids and nucleotides. Biochemistry of DNA and RNA, including their relationship to the biosynthesis of proteins. Metabolic control. PREREQUISITE: CHEM 6511.

6580-99. Special Topics in Biochemistry. (1-3). Topics are varied and announced in *Schedule of Classes*.

6601. Chemical Demonstrations. (3). Preparing and presenting demonstrations and activities to illustrate chemical principles, processes, and properties for secondary and post-secondary classes. *One lecture and four laboratory hours per week.* PREREQUISITE: CHEM 3302, CHEM 3312 or permission of instructor.

6602. Teaching High School Chemistry Laboratory. (3). Selection, modification, evaluation, and teaching of instructional chemistry experiments in high schools, including planning pedagogical goals, laboratory organization and safety, purchasing supplies, and student evaluation. *Two lecture and two laboratory hours per week.* PREREQUISITE: CHEM 3302, 3312 or permission of instructor.

6604. Instrumental Methods. (3). Analytical instrumental techniques including molecular spectroscopy, chromatography, atomic spectroscopy, and electrochemical analysis. *One lecture, six laboratory hours per week.* PREREQUISITES: CHEM 3201, 3211, 3312 or permission of instructor.

6911. Chemical Literature and Seminar. (1). Use of literature, writing of technical reports, and oral presentation of investigative reports. *One lecture hour per week.* PREREQUISITE: Permission of instructor.

7100-09. Special Topics in Inorganic Chemistry. (1-3). Lectures and conferences covering selected areas of current interest (including equilibrium, titrimetric, electroanalytical, and spectral methods, separation and radio-chemical techniques, microanalysis, statistics and data analysis, and electrode kinetics). May be repeated for a maximum of 12 hours. PREREQUISITE: Permission of instructor.

7111-8111. Systematic Inorganic Chemistry. (3). Survey of inorganic chemistry, including electronic structure, bonding, stereochemistry, symmetry, and the physical and chemical properties of the elements and their compounds. PREREQUISITE: CHEM 6111 or permission of instructor.

7112-8112. Structural Inorganic Chemistry. (3). Study of physical methods used to determine structure, and applications of group theory to chemical problems. PREREQUISITE: CHEM 6111 or permission of instructor.

7200-09-8200-09. Special Topics in Analytical Chemistry. (1-3). Lectures and conferences covering selected areas of current interest (including equilibrium, titrimetric, electroanalytical, and spectral methods, separation and radio-chemical techniques, microanalysis, statistics and data analysis, and electrode kinetics). May be repeated for a maximum of 12 hours. PREREQUISITE: Permission of instructor.

7211-8211. Advanced Analytical Chemistry I. (3). Advanced treatment of topics in atomic and molecular spectroscopy, mass spectrometry, and surface analysis techniques. PREREQUISITE: CHEM 6211 or permission of instructor.

7212-8212. Advanced Analytical Chemistry II. (3). Advanced treatment of topics in electrochemical methods and separation techniques. PREREQUISITE: CHEM 6211 or permission of instructor.

7300-09. Special Topics in Organic Chemistry. (1-3). Lecture and conferences covering selected areas of current interest (including heterocyclic chemistry, organometallic compounds, organosulfur compounds, alkaloids, steroids, terpenes, photochemistry, biosynthesis, stereochemistry, carbohydrates, new synthetic methods, high polymers, and advanced physical organic chemistry). May be repeated for a maximum of 12 hours. PREREQUISITE: Permission of instructor.

7311-8311. Advanced Organic Chemistry. (3). Physical approach to organic reaction mechanisms; reactive intermediates, aromaticity, and pericyclic reactions. Introduction to advanced spectroscopic techniques and synthetic philosophy. PREREQUISITE: CHEM 6311 or permission of instructor.

7312-8312. Synthetic Organic Chemistry. (3). Principles of synthesis of complex organic molecules. PREREQUISITE: CHEM 6311 or permission of instructor.

7314-8314. Heterocyclic Chemistry. (3). Reactions, synthesis, uses, and physical properties of heterocyclic compounds.

7400-09. Special Topics in Physical Chemistry. (1-3). Lectures and conferences covering selected areas of current interest (including non-aqueous solutions, surface chemistry, x-ray crystallography, theoretical spectroscopy, nuclear chemistry, molecular structure of macromolecules, colloid chemistry, statistical thermodynamics, esr, and nmr). May be repeated for a maximum of 12 hours. PREREQUISITE: Permission of instructor.

7411-8411. Electronic Structure and Symmetry. (3). Basic quantum chemistry with applications to simple systems. Group theory and its applications. Molecular orbital theory including Huckel, SCF-LCAO-MO, and Qualitative MO methods. PREREQUISITE: CHEM 6411 or permission of instructor.

7413-8413. Molecular Spectroscopy. (3). Spectroscopy of molecular systems including infrared, UV, visible, microwave, Raman, NMR, and ESR; theory for obtaining molecular information from different types of spectroscopy. PREREQUISITE: CHEM 6411 or permission of instructor.

7414-8414. Advanced Quantum Chemistry. (3). Advanced treatment of topics in quantum chemistry with emphasis on electronic structure theories.

7500-09. Special Topics In Biochemistry. (1-3). Lectures and conferences covering selected areas of current interest (including enzymology, protein and nucleic acid chemistry, physical chemistry of biochemical macromolecules, lipid, carbohydrate, and amino acid metabolism, biochemical energetics, and metabolic regulation). May be repeated for a maximum of 12 hours. PREREQUISITE: Permission of instructor.

†7600. Teaching Chemistry Laboratories. (2). Laboratory instruction emphasizing communication skills, laboratory conduct and safety, and evaluation of performance. *Two laboratory hours per week.*

7711-8711. Approximate Chemical Modeling Methods. (3). Development of approximate classical and quantum mechanical techniques for modeling chemical systems, molecular mechanics, semiempirical quantum mechanics. PREREQUISITE: CHEM 7411 or permission of instructor.

7712-8712. Computational Chemistry Programming. (3). Programming for chemical applications in chemistry, parallel programming methods, computational chemistry on high-performance computers. PREREQUISITE: CHEM 7411 or permission of instructor.

7713-8713. Advanced Solid State Physics and Chemistry. (3). Quantum mechanical treatment of electronic and vibrational states of

metals, semiconductors and insulators, transport phenomena, superconductivity, physics of defects in solids. **PREREQUISITE:** CHEM 7411 or permission of instructor.

†7910-8910. Special Problems in Chemistry. (1-12). Individual investigation and report under the guidance of the student's major adviser.

†7911. Presentation. (1). Preparation and presentation of a short talk or lecture based on a laboratory or library project. Topic chosen in consultation with adviser.

†7913-8913. Chemistry Seminar. (1). Formal meetings, presentation, and discussion of current topics of interest. Students, faculty and visiting scientists participate. Required of all regularly enrolled graduate students. A maximum of four semester hours from a combination of CHEM 6911, 7-8911, and 7-8913 may be counted toward the degree.

†8000. Research and Dissertation/Thesis. (1-6). An original investigation undertaken with the supervision of a member of the graduate staff. The investigation will be the basis of a dissertation or thesis.

8100-09. Special Topics in Inorganic Chemistry. (1-3). Lectures and conferences covering selected areas of current interest (including equilibrium, titrimetric, electroanalytical, and spectral methods, separation and radio-chemical techniques, microanalysis, statistics and data analysis, and electrode kinetics). May be repeated for a maximum of 12 hours. **PREREQUISITE:** Permission of instructor.

8200-09. Special Topics in Analytical Chemistry. (1-3). Lectures and conferences covering selected areas of current interest (including equilibrium, titrimetric, electroanalytical, and spectral methods, separation and radio-chemical techniques, microanalysis, statistics and data analysis, and electrode kinetics). May be repeated for a maximum of 12 hours. **PREREQUISITE:** Permission of instructor.

8300-09. Special Topics in Organic Chemistry. (1-3). Lecture and conferences covering selected areas of current interest (including heterocyclic chemistry, organometallic compounds, organosulfur compounds, alkaloids, steroids, terpenes, photochemistry, biosynthesis, stereochemistry, carbohydrates, new synthetic methods, high polymers, and advanced physical organic chemistry). May be repeated for a maximum of 12 hours. **PREREQUISITE:** Permission of instructor.

8400-09. Special Topics in Physical Chemistry. (1-3). Lectures and conferences covering selected areas of current interest (including non-aqueous solutions, surface chemistry, x-ray crystallography, theoretical spectroscopy, nuclear chemistry, molecular structure of macromolecules, colloid chemistry, statistical thermodynamics, esr, and nmr). May be repeated for a maximum of 12 hours. **PREREQUISITE:** Permission of instructor.

8500-09. Special Topics In Biochemistry. (1-3). Lectures and conferences covering selected areas of current interest (including enzymology, protein and nucleic acid chemistry, physical chemistry of biochemical macromolecules, lipid, carbohydrate, and amino acid metabolism, biochemical energetics, and metabolic regulation). May be repeated for a maximum of 12 hours. **PREREQUISITE:** Permission of instructor.

†8911. Advanced Presentation. (1). Preparation and presentation of one-hour lecture as regularly scheduled department seminar. Topic chosen in consultation with adviser.

†9000. Doctoral Research and Dissertation. (1-10). An original investigation undertaken with the supervision of a member of the graduate staff to be the basis of a doctoral dissertation and a contribution to the chemical literature. (Maximum amount of semester credits is 30).

†Grades of S, U, or IP will be given

Criminology and Criminal Justice

W. RICHARD JANIKOWSKI, J.D.,
Chair

Room 405, Mitchell Hall

MARGARET VANDIVER, Ph.D.,
Coordinator of Graduate Studies
(901) 678-2737

E-mail: cevans@memphis.edu
www.people.memphis.edu/~cjustice/cjus.htm

MEMBERS

DAVID JAMES GIACOPASSI, Professor

Ph.D. (1975), The University of Notre Dame [2000]

W. RICHARD JANIKOWSKI, Associate Professor
J.D. (1981), DePaul University [1999]

JERRY R. SPARGER, Professor

Ph.D. (1973) University of Tennessee, Knoxville [1999]

MARGARET VANDIVER, Associate Professor

Ph.D. (1989) Florida State University [2004]

ASSOCIATE MEMBERS

FRANK M. AFFLITTO, Assistant Professor

Ph.D. (1998), University of California, Irvine [2004]

HANNAH SCOTT, Assistant Professor

Ph.D. (1997), The University of Alberta, Canada [2004]

I. The Department of Criminology and Criminal Justice offers the Master of Arts degree with a major in Criminal Justice. The program is designed to provide a wide range of individual specialization with curricula specifically tailored to each student's undergraduate preparation, work experience, and career objectives. Coursework emphasizes the institutions and the processes of the criminal justice system, with a scientific approach to the analysis of organizational and management issues in criminal justice. The program stresses a broad understanding of the social and behavioral sciences; comprehension of the general legal issues important to criminal justice administration; development of methodological tools and skills for research and program evaluation; and acquisition of knowledge about administrative and managerial issues in criminal justice organizations. The program is based on an interdisciplinary approach, linking the criminal justice system with other academic disciplines to develop in students an awareness of other theoretical perspectives and bodies of knowledge.

II. M.A. Degree Program

A. Program Admission

Admission to the program is competitive and is not automatic upon meeting minimum departmental admission requirements. Students are selected from the pool of qualified applicants for the program, and the number of students admitted to the program yearly depends on availability of financial aid and adequate faculty supervision. All application material should be received by April 1 for a candidate to be considered for the fall semester and October 1 for the spring semester. Admission for the summer session is not considered.

To be considered for admission, the applicant must meet the following minimum criteria:

1. A baccalaureate degree from an accredited college or university.
2. A grade point average of at least 3.00 on a scale of 4.00.
3. A minimum score at or above the 50th percentile on both the verbal and quantitative sections of the GRE, or an MAT score of 45 or above. The admissions committee reserves the right to make exceptions for candidates whose scores are close to the minimum requirements, or for candidates presenting special circumstances.

B. Program Requirements

1. A total of 30 semester hours of graduate work plus the completion and defense of a thesis, or 36 semester hours of graduate work without a thesis.
2. Satisfactory completion of the following core curriculum:
CJUS 7100 Proseminar in the Criminal Justice System
CJUS 7128 Research Methods in Criminal Justice
CJUS 7130 Crime Analysis and Criminal Behavior
CJUS 7570 Legal Issues in Criminal Justice Administration
CJUS 7523 The Concept of Criminal Law
CJUS 7541 Criminological Theory
3. A minimum of 27 hours of coursework at the 7000 level, including thesis hours.
4. Up to nine hours of coursework may be taken outside the department with prior approval of the graduate coordinator.
5. Satisfactory performance on a comprehensive examination covering the major areas of criminology and criminal justice.

6. Students will be allowed no more than six hours of credit toward the degree in non-classroom courses such as internships, individual directed studies, and reading courses.

C. Retention Requirements

1. All students are required to maintain a GPA of at least 3.00. Should the student's GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair and the coordinator of graduate studies, this period may be extended one additional semester.
2. Any student receiving a grade of D or F in a required course in the core curriculum will be terminated from the program.

CRIMINOLOGY AND CRIMINAL JUSTICE (CJUS)

6010-19. Special Topics in Criminal Justice. (1-3). Topics are varied and announced in *Schedule of Classes*.

6160. Forensic Sciences. (3). Forensic specialties will be discussed in terms of their history, the scientific rationale upon which each is based, and the problems that may compromise accuracy or validity; introduction to field techniques and analysis of evidence.

6180. Corporate and White-Collar Crime. (3). Organizational and occupational crime in comparison to other types of criminality; emphasis on causes, frequency, control, and social impact.

6190. Terrorism: Social and Legal Perspectives. (3). Theoretical and ideological aspects of practice of and response to international and domestic terrorism; terrorism as crime from political, social, economic, historical, and legal perspectives.

6520. Substantive Criminal Law. (3). Substance of the crime, including common-law sources and basic principles, types of offenses, responsibility, justification and excuse, and related areas.

6531. Issues In Constitutional Rights. (3). Topical issues in constitutional law related to criminal defendants and incarcerated; exclusionary rule and its alternatives, application of 1st Amendment to criminal law, legal status of confined persons, liability of correctional/police officials and civil/criminal legal techniques for protecting and vindicating constitutional rights, such as *habeas corpus* and 42 USC 1983.

6533. Juvenile Delinquency: Theory and Process. (3). Theories of juvenile delinquency, gang activities, and status offenses; history, organization, programs, and procedures of agencies charged with control and prevention of juvenile delinquency including police, juvenile units, juvenile courts, and juvenile correctional agencies.

7100-8100. Proseminar In the Criminal Justice System. (3). Major functional components of criminal justice system from historical, philosophical, and systems perspective; analysis of interrelationships among components; impact of social and political forces on roles and functions of criminal justice agencies; review of research on operational goal attainment.

†7110-8110. Individual Directed Study. (1-4). Individual directed research/readings in special areas of interest in the field of criminal justice. PREREQUISITE: Permission of Coordinator of Graduate Studies. May be repeated for a maximum of 4 credit hours.

7120-8120. Criminal Justice Policy Formulation and Analysis. (3). Theories, models, and methods of policy formulation and evaluation in criminal justice organizations; emphasis on utilizing social science methodologies in decision-making process and administrative problem solving within legal and budgetary constraints.

7128-8128. Research Methods in Criminal Justice. (3). Principles of social science research as applied to the study of the criminal justice system. Sampling techniques and research strategies. Emphasis on the development of research skills enabling the student to conduct an independent research project.

7130-8130. Crime Analysis and Criminal Behavior. (3). In-depth study of "normal crimes"; the analysis of the characteristics of the criminal, the victim, and the setting for specified offenses. The typical demographic and ecological elements of each type of crime with the purpose of providing a framework for analysis and comparison.

†7140-8140. Graduate Colloquium. (3). Presentations of scholarly activity and examination of classical and contemporary issues in criminology and criminal justice. Required of all graduate assistants. PREREQUISITE: Appointment as a graduate assistant in Criminology and Criminal Justice. May be repeated.

†7141-8141. Reading for Comprehensives. (1-6). Arranged on an individual basis for Criminology and Criminal Justice graduate students only and directed by faculty. PREREQUISITES: Student must have completed required course work or be in the last semester of required course work.

†7150-8150. Internship in Criminal Justice. (3-6). Experience in a criminal justice setting through assignment to an enforcement, judicial, or correctional agency under joint supervision of agency officials and university faculty. PREREQUISITE: Permission of Coordinator of Graduate Studies.

7160-8160. Seminar in Criminal Justice Administration. (3). Theories of organization with emphasis on structures, principles, techniques, and processes of criminal justice agencies; factors affecting behavior within such organizations; motivation, leadership, group dynamics, conflict management, unionization, selection, training, performance evaluation, organizational change, and political factors in public agency operation.

7190-99-8190-99. Special Topics in Criminal Justice. (3). Systematic and comprehensive examination of important and timely issues and development in the field of criminal justice. May be repeated for a maximum of six hours.

7510-8510. Law and Society. (3). Examination of law as a system of control and as a mechanism for the resolution of conflict. Relationship of law to political, economic, and social systems critically analyzed; the development of the legal profession.

7523-8523. The Concept of Criminal Law. (3). Social foundation and principles on which our system of criminal law is based.

7541. Criminological Theory. (3). Criminological theories and ideas representing attempts to forge new paradigms or revive dormant ones; evaluation of new ideas in light of historical developments within criminology, boundary conditions of new theories, and policy implications.

7570-8570. Legal Issues in Criminal Justice Administration. (3). Relationship between legal and constitutional issues and concepts of ordered liberty and administration of justice; application of legal methodology to analysis of current issues in constitutional rights and remedies.

†7996. Thesis. (1-6).

†Grades of S, U, or IP will be given

English

CHRISTINA MURPHY, Ph.D., Chair
Room 467, Patterson Hall

GENE A. PLUNKA, Ph.D.,
Coordinator of Graduate Studies
(901)-678-4507

E-mail: jccarr@memphis.edu
www.people.memphis.edu/~english

MEMBERS

- MARY BATTLE, Associate Professor
Ed.D. (1986), Memphis State University [2000]
JOHN BENSKE, Assistant Professor
Ph.D. (1985), Florida State University [2004]
THERON BRITT, Associate Professor
Ph.D. (1990), University of California, Irvine [2001]
THOMAS CLARK CARLSON, Professor
Ph.D. (1972), Rutgers University [2001]
BARBARA CHING, Assistant Professor
Ph.D. (1990), Duke University [1999]
PATRICIA E. CONNORS, Associate Professor
Ph.D. (1978), University of Detroit [2001]
CHARLES HALL, Associate Professor
Ph.D. (1983), University of Florida [2001]
MARY SUE MACNEALY, Professor
Ph.D. (1988), Carnegie Mellon University [2000]
CATHERINE MARTIN, Associate Professor
Ph.D. (1989), University of California, Santa Cruz [2001]

REGINALD MARTIN, Professor

Ph.D. (1985), University of Tulsa; M.F.A. (1993), Norwich University [2000]

CHRISTINA MURPHY, Professor

Ph.D. (1971), University of Connecticut [2003]

PAUL NAYLOR, Associate Professor

Ph.D. (1989) University of California at San Diego [2004]

WILLIAM H. O'DONNELL, Professor

Ph.D. (1971), Princeton [1999]

GORDON THOMAS OSING, Professor

M.F.A. (1973), University of Arkansas [2000]

GENE A. PLUNKA, Professor

Ph.D. (1978), University of Maryland [2001]

THOMAS RUSSELL, Professor

Ph.D. (1981), University of Kansas [2004]

NASEEB SHAHEEN, Professor

Ph.D. (1969), University of California, Los Angeles [2003]

SUSAN SCHECKEL, Associate Professor

Ph.D. (1991), University of California, Berkeley [2004]

EMILY A. THRUSH, Associate Professor

Ph.D. (1990), Georgia State University [2001]

CYNTHIA G. TUCKER, Professor

Ph.D. (1967), University of Iowa [1999]

JENNIFER A. WAGNER-LAWLOR, Associate Professor

Ph.D. (1990), Yale University [2001]

DANIEL RAY WILLBANKS, Professor

Ph.D. (1973), University of Texas at Austin [2000]

ASSOCIATE MEMBERS**LYNETTE C. BLACK, Associate Professor**

Ph.D. (1972), University of Nebraska [2003]

TERESA S. DALLE, Associate Professor

Ph.D. (1983), University of Arizona [2003]

KAY P. EASSON, Professor

Ph.D. (1970), University of Tulsa [2000]

RANDALL KENAN, Visiting Assistant Professor

B.A. (1985), University of North Carolina at Chapel Hill [2004]

PHILIP KOBYLARZ, Instructor

M.F.A. (1993) University of Iowa Writers' Workshop [2002]

JAMES W. NEWCOMB, Associate Professor

Ph.D. (1974), University of Iowa [2001]

ANITA PANDEY, Assistant Professor

Ph.D. (1997), University of Illinois [2004]

JOAN WEATHERLY, Professor

Ph.D., (1973), University of Alabama [2001]

JEFFREY WILLIAMS, Assistant Professor

Ph.D. (1998), University of Missouri [2004]

ADJUNCT MEMBER**JERRY WARD**

Ph.D. (1978), University of Virginia [2000]

- I. The Department of English offers programs of study leading to the Master of Arts degree, the Master of Fine Arts degree, and the Doctor of Philosophy degree. Entering students will consult with a departmental advisor to plan their course of study. Students in the M.A. program will choose one concentration from the four offered: Language and Linguistics, Literature, Writing (Creative Writing or Professional Writing), or English as a Second Language. Students in the Ph.D. program will choose one of four concentrations: Composition Studies, Professional Writing, Applied Linguistics, or Textual Studies.

II. M.A. in English Degree Program**A. Admission**

1. An overall minimum grade point average of 2.50 at the undergraduate level.
2. A satisfactory score on the Miller Analogies Test or the Graduate Record Examination.
3. Transcripts showing any graduate work should also be sent to the Coordinator of Graduate Studies, Department of English.

B. Program Prerequisites

An undergraduate degree with a major in English. A student who does not have an undergraduate major in English or appropriate background may be required to complete a maximum of 12 upper division hours in English with a grade of B or higher in each course.

C. Program Requirements

1. A total of thirty (30) semester hours of course work plus thesis, or a total of thirty-three (33) semester hours of course work for the student who elects not to write a thesis.
2. Two graduate courses (six semester hours) in literature, excluding ENGL 7100.
For those in Creative Writing, an additional graduate modern or contemporary literature course (3 semester hours) chosen from the following is required: 7029-39 (where applicable), 7291, 7292, 7293, 7391, 7392, 7393, 7441, 7442, 7462, 7464, 7466.
3. Students must complete the following minimum course work, beyond the requirement in 2, in at least one of these concentrations: Language and Linguistics 12 hours from ENGL 7501, 7511-7516, and 7590; Writing (Creative or Professional) 12 hours, Literature 15 hours (excluding English 7100); English as a Second Language 18 hours.
The Writing concentration (Creative or Professional) requires a 3-hour thesis.
Professional Writing students will complete their twelve hours as follows: ENGL 7806 and 7809, and two courses selected from the following: 6602, 7003, 7802, 7803, 7805, 7807, 7808, and 7810.
Courses numbered 7004, 7005, 7006, 7812, and 7813 require approval of the Chair of the Department and Coordinator of Graduate Studies in order to be applied toward any concentration.
4. Oral comprehensive examination for students who write a thesis, and a written comprehensive examination for those who do not. Students should contact the English Graduate Office for examination format and dates.
5. Reading knowledge of a foreign language for students who choose concentrations in ESL or Linguistics. Proficiency may be demonstrated in a variety of ways (inquire in English Graduate Office for options). Other languages may be substituted if they are shown to be relevant to the student's course of study. Students intending to pursue a Ph.D. are advised to develop a reading competency in at least one of the following: French, German, Latin, or Greek.
6. Thesis (English 7996) Optional, except for the concentration in Writing (Creative or Professional).
7. An average of 3.00 in all graduate English courses.
8. Each graduate teaching assistant in the Department of English must enroll in English 7003 before or concurrent with first teaching assignment.

III. M.F.A. in Creative Writing Degree Program

The Master of Fine Arts in Creative Writing provides studies in poetry, fiction, and nonfiction. In addition to writing workshops, students take courses in literature and in the theory of writing, including English language and linguistics. A book-length thesis of publishable quality is required; it will be directed by a member of the M.F.A. faculty. The M.F.A. requires 48 graduate semester hours, with a 3.00 grade point average in all graduate courses.

A. Admission

1. An overall minimum grade point average of 2.50 at the undergraduate level.
2. A portfolio of writing samples in the applicant's chosen genre (at least 20-25 pages of fiction or ten poems), demonstrating a potential for development to a professional standard of writing. The writing sample will be evaluated by a committee of M.F.A. faculty. The committee will recommend admission of those applicants with the highest demonstrated talent.
3. Baccalaureate degree in English or if baccalaureate is in another field, twelve (12) semester hours in program prerequisites.
4. Miller Analogies Test (minimum score: 36) or Graduate Record General Examination (minimum verbal score: 450). Deadlines: February for the following fall semester admission and October for following spring semester.

B. Program Prerequisites

A minimum of twelve (12) semester hours in upper division literature courses with a minimum grade point average of 2.5 in these courses.

C. Transfer Credit

Any applicant who holds an M.A. degree in English may transfer up to a maximum of twenty-four (24) semester hours in English earned for that degree to apply toward the M.F.A. degree. A student's advisor will insure that the combination of transfer credits and courses taken in the program has appropriate breadth.

D. Core Requirements

1. Writing Workshops and Forms Courses - A total of 18 semester hours required: 12 hours of 7602 and 7603, at least 9 hours of which must be in chosen genre; one forms class (7470, 7471, or 7472) in chosen genre, and one cross-genre course (either forms 7470, 7471, or 7472) or a workshop (7601, 7602 or 7603).
2. Literature - Eighteen (18) semester hours, selected from English 7020-39 (literature or criticism topics and approval of the Director of Creative Writing and the Coordinator of Graduate Studies), 7211, 7230, 7232, 7233, 7242, 7244, 7254, 7256, 7264, 7265, 7266, 7276, 7278, 7280, 7291, 7292, 7293, 7323, 7324, 7391, 7392, 7393, 7411, 7412, 7441, 7442, 7451, 7452, 7462, 7464, 7466, 7473, 7474, 7701, or 7702.

3. Theory of writing and English Language/Linguistics - Six (6) semester hours selected from English 7020-29 (theory of writing and English Language/ Linguistics topics), 7003, 7475, 7501, 7511, 7512, 7513, 7514, 7515, 7516, 7531-7537, 7590, 7701, 7702, 7801, 7802, 7803, 7805, 7806, 7807, 7809, 7810, and 7862. The student's advisor will ensure that the selections have appropriate breadth.
4. Thesis (English 7996), six (6) semester hours.
5. Oral review of thesis.

IV. Ph.D. in English: Writing and Language Studies Degree Program

The Ph.D. in English is designed to prepare scholars in widely recognized fields of English, as well as to prepare advanced writing specialists in the fields of business and industry. The structure of the program provides for four related concentrations (Composition Studies, Professional Writing, Applied Linguistics, Textual Studies) that offer students the professional flexibility that comes with competencies acquired through preparation in a broadly integrative discipline.

A. Admission

The following are required for admission to the Ph.D. program in English for all applicants, whether applying with a bachelor's or master's degree.

1. Fulfillment of University requirements for admission to the Graduate School.
2. An official transcript(s) sent to the Graduate Office and to the Director of Graduate Studies.
3. A minimum score of 600 generally is expected on the verbal portion of the GRE. In addition, for international students, for whom English is not their first language, a minimum score of 575 (or computer equivalent) on the TOEFL exam is required.
4. A bachelor's or master's degree from an accredited college or university in the United States, usually with a major or a strong minor in English, or the equivalent of one of these degrees in another country.
5. Minimum undergraduate and graduate grade point average of 3.00 is expected.
6. Evidence of competence in writing in English as evidenced by a statement of purpose and a sample of the applicant's best work.
7. Two letters of recommendation, preferably from college/university professors of English or comparable disciplines.

B. Retention Requirements

Upon entering the Ph.D. program, a student is assigned an advisor in his or her concentration. The advisor will monitor the student's progress towards completion of the degree. Each semester, the Graduate Studies Committee will examine the academic progress of all students for retention in the program.

C. Graduation Requirements

1. General Requirements

Each student must earn at least 72 credit hours beyond the bachelor's degree. Master's level courses will be examined on an individual basis for applicability to the program. No more than 9 hours granted for dissertation work may be used to attain the required 72 hours. At least 60 credit hours must be earned at the 7000 level or higher.

2. Residency Requirements

The student must complete two successive terms full-time (excluding summer sessions) to fulfill residency requirements.

3. Core Requirements

Students must take a core of 12 hours in literature; 6 hours in linguistics; 6 hours in composition studies or professional writing; and 3 hours in English Studies Colloquium.

4. Concentration Requirements (beyond Core Requirements)

- a. Composition Studies: 18 hours in composition studies, plus 9 hours in applied linguistics, textual studies, and/or professional writing.
- b. Professional Writing: 18 hours in professional writing, plus 9 hours in applied linguistics, textual studies, and/or composition studies.
- c. Applied Linguistics: 18 hours in linguistics or ESL, plus 9 hours in composition studies, professional writing, textual studies, and/or literature.
- d. Textual Studies: 9 hours in theory/methodology, 12 hours in textual studies, and 6 hours in theories of language (any combination of linguistics, composition studies, professional writing, or other courses that the advisory committee approves).

5. Electives

Nine hours approved by the advisory committee, of which 6 may be taken outside the department.

6. Examination Requirements

- a. Qualifying Examinations: Students entering without a master's degree in English or 33 hours of appropriate graduate work must take qualifying examinations after accumulating 30 hours of graduate work through graduate transfer credit and/or graduate courses completed at The University of Memphis. Qualifying examinations are designed to ascertain that the range of knowledge is appropriate at this level. These written exams will be tailored to the individual student's course of study. Students passing these examinations at an appropriate level will be allowed to advance to specialized doctoral-level study. A student who fails one or more sections of the qualifying examination will be given one opportunity to take a different exam. Examinations are graded high pass, low pass, or fail. Students achieving a high pass on these examinations will be allowed to advance to specialized doctoral-level study. Those who receive a

low pass may complete the requirements for the master's degree. A student who receives a low pass or fails one or more sections of the qualifying examination will be given one opportunity to take a different exam.

- b. Comprehensive Examinations: After completing the rest of their required courses and before they begin writing their dissertations, students will take comprehensive examinations designed to test their range of knowledge in their chosen area of concentration. The comprehensive examinations will consist of two parts: a four-hour written exam in the concentration and a two-hour oral exam addressing the integrative aspects of the candidate's program. The exam will be prepared by the student's dissertation committee. Students passing these examinations will be allowed to register for dissertation credit.

7. Language Requirements

Students must demonstrate reading knowledge of two foreign languages or fluency in one foreign language.

8. Dissertation Requirements

The student is responsible for choosing an advisory committee composed of the graduate faculty best qualified to help him or her conduct research for the dissertation. If the student's research requires faculty expertise in a discipline outside the Department of English, the student, in consultation with his or her advisory committee chair, may ask up to two faculty members outside the Department of English to be part of the required five-member committee. When the student has passed the comprehensive examinations and has done extensive preliminary research, he or she must present and defend a research proposal before the advisory committee. That defense will be open to the entire academic community. The student must give a copy of the proposal to all committee members at least two weeks before the scheduled meeting. The advisory committee must approve the proposal before the student may proceed with the dissertation.

The dissertation committee will schedule a defense of the completed dissertation. Both the chair of the advisory committee and the candidate must ensure adequate consultation with members of the dissertation committee well in advance of the defense date. This final oral examination, in which the dissertation is defended, is open to the public.

ENGLISH (ENGL)

†6500. Language Skills for Internationals. (3).

†6590. International Teaching Assistants. (3).

6602. Advanced Composition. (3). Principles involved in writing clear expository prose. Emphasis on application of these principles; analysis of readings and of student's writing.

7000. Methods and Contexts of Literary Scholarship. (3).

7001. Language and Composition. (3). Studies in the craft of composition, with focus upon sound editorial practice and the writing and analysis of the varieties of expository prose.

7003. Theory and Practice in Teaching Composition. (3). Designed for graduate assistants teaching English 1101. Emphasis on the ways and techniques of teaching rudiments of English composition on college level. Required of and restricted to graduate teaching assistants.

†7004. Internship for Graduate Teaching Assistants. (3). Supervision of and consultation with English teaching assistants. PREREQUISITES: ENGL 7003 or equivalent plus appointment as graduate teaching assistant in English. Repeatable.

†7005. Reading for Comprehensives. (3). Arranged on an individual basis for English graduate students only. PREREQUISITE: Student must have completed required course work toward degree or be in the last semester of required course work. Repeatable.

†7006. The English Profession. (3). Presentations relating to the profession of college teaching, including methods and means of research and publication in different fields of English.

7020-49. Special Topics in English. (3). Topics are announced in *Schedule of Classes*.

7100. Independent Study. (1-6). Focuses on a selected topic dealing with language study or a literary form, theme, figure, or movement. Topic chosen by student and approved by student's advisor and Department Chair. Can be used only as an elective.

7211. Medieval Literature. (3).

7230. Chaucer. (3).

7232. Shakespeare's Tragedies. (3).

7233. Shakespeare's Comedies and Histories. (3).

7242. English Renaissance Literature. (3).

7244. Elizabethan and Jacobean Drama. (3).

7254. **English Literature of the Seventeenth Century.** (3).
7256. **Milton.** (3).
7264. **English Poetry and Prose, 1660-1800.** (3).
7265. **Eighteenth Century British Novel.** (3).
7266. **English Drama from 1660 to 1800.** (3).
7276. **English Literature of the Romantic Period.** (3).
7278. **Victorian Literature.** (3).
7280. **Nineteenth Century British Novel.** (3).
7291. **Modern British Novel.** (3).
7292. **Modern British Poetry.** (3).
7293. **Modern British Drama.** (3).
7323. **American Literature to 1865.** (3).
7324. **American Literature 1865-1914.** (3).
7391. **Modern American Novel.** (3).
7392. **Modern American Poetry.** (3).
7393. **Modern American Drama.** (3).
7411. **European Literature to Renaissance.** (3).
7412. **European Literature since Renaissance.** (3).
7441. **European Fiction.** (3). Movements and writers important to development of Continental fiction from late eighteenth century to present.
7442. **Modern European Drama.** (3).
7451. **Women and Literature.** (3). Literature and criticism by and about women.
7452. **Biography: Process and Text.** (3).
7462. **Contemporary British and/or Commonwealth Literature.** (3). Authors, works, genres, and literary styles in development of contemporary British and Commonwealth literatures.
7464. **Contemporary American Literature.** (3). Authors, works, genres, and literary styles in development of contemporary American literature.
7466. **Contemporary World Literatures in Translation.** (3). Contemporary non-English fiction in translation, primarily from non-Western European cultures; focus on major movements and writers.
7470. **Forms of Creative Nonfiction.** (3). Creative nonfiction with attention to historical roots and contemporary theory and practice.
7471. **Forms of Fiction.** (3). A study of how fiction works through analyzing the short story, the novella, and the novel with attention to historical developments.
7472. **Forms of Poetry.** (3). A study of meters, forms, and types of poetry in English with attention to the principal traditions and critical ideas associated with the writing of verse in English.
7473. **Verbal/Visual Texts.** (3). Repeatable up to 6 hours with change of topic.
7474. **Cultural Texts.** (3). Repeatable up to 6 hours with change of topic.
7475. **Literary Publishing.** (3). Theory and practice of publication management and literary editing.
7501. **History of the English Language.** (3).
7511. **Introduction to Modern English.** (3). An introduction to the nature of language with emphasis on basic principles of English phonology and morphology with special attention to syntax. Emphasis on collecting and handling of linguistic data for research purposes.
7512. **English Syntax.** (3). Study of structures of Modern English from perspective of various contemporary theories to see how form and meaning are integrally related; emphasis on methods of investigating questions that need to be asked in exploring new territory.
7513. **Dialectology.** (3). Dialects and varieties of American English; emphasis on methods of analyzing data and techniques of eliciting responses to gain information about word forms, syntax, and pronunciation; social implications.
7514. **Sociolinguistics.** (3). Language use in relation to social interaction and power structures; inequality in varied environments; appraisal of methodologies used in gathering and analyzing data.
7515. **Language and Literature.** (3). Application of linguistic theory to analysis of literature, nature of literary language, and linguistic options open to writers.
7516. **English Phonetics and Phonology.** (3). Articulatory and linguistic phonetics, phonetic transcription, suprasegmental phonology, overview of English phonology, and information on teaching English pronunciation to speakers of other languages.
7530. **Field Experience and Practicum in ESL.** (3, 6). Experience in observing and teaching, peer teaching, and work with an English as a Second Language (ESL) specialist.
7531. **Theory and History of ESL.** (3). Survey of relation of linguistic principles to second language acquisition.
7532. **Principles of Skills Assessment in ESL.** (3). Application of theories of teaching second language skills with emphasis on testing in a second language.
7533. **Methods and Techniques of ESL in K-12.** (3). Techniques and resources for working with children and adolescents for whom English is a second language.
7534. **Second Language Acquisition, Bilingualism, and Bidialectalism.** (3). Theories of second language acquisition, development of second language proficiency, and research in bilingualism.
7535. **ESL Grammar.** (3). Grammatical systems and strategies of Modern English; analysis of English structures that tend to cause difficulty for ESL/SESD speakers.
7536. **Issues in Second Language Writing.** (3). Emphasis on research in second language writing, especially the role of psychological, social, and cultural influences on learning to write in a second language.
7537. **Issues in Second Language Reading.** (3). Emphasis on how non-native speakers of English learn to read in English, the effect of context and culture on L2 reading, and culturally related responses to reading and literacy traditions.
7590. **Applied and Theoretical Linguistics.** (3). Intensive study of specialized areas in English linguistics. Repeatable up to 6 hours with change of topic.
7601. **Creative Nonfiction Workshop.** (3). Emphasis on examination and discussion of creative nonfiction written by students. Repeatable to a maximum of 12 hours. PREREQUISITE: Permission of instructor.
7602. **Fiction Workshop.** (3). Emphasis on the examination and the discussion of fiction written by students. Repeatable to maximum of 12 hours. PREREQUISITE: Permission of instructor.
7603. **Poetry Workshop.** (3). Emphasis on the examination and the discussion of poetry written by students. Repeatable to maximum of 12 hours. PREREQUISITE: Permission of instructor.
7701. **Historical Perspectives on Literary Criticism.** (3). Synchronic and diachronic approaches to history of literary criticism, classical to modern.
7702. **Contemporary Perspectives on Literary Criticism.** (3). Major movements in literary criticism of the twentieth century; topics vary, but emphasis given to contemporary theory and criticism.
7801. **History of Composition.** (3). Development of approaches to composition traced to their roots in classical tradition through changes introduced by rise of Christianity, scientific revolution, emphasis on universal education in America, and recent shifts in the paradigm.
7802. **Theories of Composition: Early Perspectives.** (3). Application of early theories of composition to tasks faced by modern writers and writing theorists, selections from early theorists, such as Plato, Aristotle, Cicero, Justin Martyr, and Augustine.
7803. **Theories of Composition: Modern Perspectives.** (3). Writings of modern composition theorists, including Flower, Kinneavy, Shaughnessy, Young, and others, with special emphasis on invention, purpose, arrangement, style, and audience.
7805. **Foundations of Technical Writing.** (3). Introduction to fields of scientific and corporate writing; relevant theories in the fields, including classical rhetoric, modern discourse theory, cognitive psychology, and semiotics; extensive practice in writing and analyzing technical documents.

7806. Research Methods in Writing. (3). Bibliographic techniques and an introduction to empirical methodologies for the study of the writing process and the testing of written documents.

7807. Workshop: Government and Corporate Writing. (3). Textual and contextual analysis of the kinds of writing produced most often in government, law, and business; practice in writing correspondence, reports, briefs, manuals, and proposals.

7808. Workshop: Scientific and Technical Writing. (3). Textual and contextual analysis of the kinds of writing produced most often in industry and the academic research community; practice in writing documents such as technical proposals, reports, computer documentation, and papers for publication.

7809. Technical Editing. (3). Current practices in editing and publication in the field of technical communication; topics include copy-editing, substantive editing, author-editor relations, and the production process.

7810. Document Design. (3). Theory of visual and written communication, focusing on the problem of how to integrate graphics and written text; practice in design and desktop publishing.

7811. Internship in Professional Writing. (3). Assigned on the basis of qualifications and availability; student does a semester's work in technical, scientific, legal, government, or business writing and provides an extensive report and analysis. **PREREQUISITE:** 12 hours of graduate study.

7812. Memphis Urban Writing Institute I. (3). Intensive study of writing research, current writing practices, and issues and trends related to K-12 writing instruction. (Same as ICL 7304-8304).

7813. Memphis Urban Writing Institute II. (3). Prepares K-12 teachers to improve their own writing practices and assume a leadership role in writing instruction in their schools. (Same as ICL 7305-8305).

7862. Writing Technical Manuals. (3). Focus on theories of manual writing, including minimal and cognitive approaches, with discussion of learning strategies and usability studies.

†7996. Thesis. (1-6). A prospectus for the thesis must be approved by the student's advisor and the department chair before the student registers for this course. The completed thesis must be approved by at least two readers.

†Grades of S, U, or IP will be given

Foreign Languages and Literatures

RALPH ALBANESE, JR., Ph.D., *Chair*
Room 375A Winfield Dunn Building

FERNANDO BURGOS, Ph.D.,
Coordinator of Graduate Studies
(901) 678-2506

E-mail: fburgos@memphis.edu
www.people.memphis/~forlanglit/flhome.html

MEMBERS

RALPH ALBANESE, *Professor of French*
Ph.D. (1972), Yale University [2003]

FERNANDO BURGOS, *Professor of Spanish*
Ph.D. (1980), University of Florida [2004]

MARY JANE FENWICK, *Associate Professor of Spanish*
Ph.D. (1978), University of Minnesota [1999]

SUSAN M. JOHNSON, *Associate Professor of French*
Ph.D. (1983), Indiana University [1999]

DRAGAN KUJUNDZIC, *Assistant Professor of Russian*
Ph.D. (1994), University of Southern California [2001]

FELIPE ANTONIO LAPUENTE, *Professor of Spanish*
Ph.D. (1967), St. Louis University [2000]

DAVID PATTERSON, *Professor*
Ph.D. (1989), Cornell University [2003]

WILLIAM THOMPSON, *Associate Professor of French*
Ph.D. (1989), Cornell University [2003]

ANTONIO TORRES-ALCALÁ, *Associate Professor of Spanish*
Ph.D. (1974), Catholic University of America [2000]

ASSOCIATE MEMBERS

LEO A. CONNOLLY, *Professor of German*
Ph.D. (1973), New York University [2000]

JOSE LUIS FREIRE, *Associate Professor of Linguistics*
Ph.D. (1975), University of Michigan [2000]

NELE HEMPEL, *Assistant Professor of German*
Ph.D. (1998), University of Connecticut [2004]

KAZUMI MATSUOKA, *Assistant Professor of Japanese*
Ph.D. (1998), University of Connecticut [2004]

MONIKA NENON, *Assistant Professor*
Ph.D. (1988), University of Freiburg [2000]

DE-AN W. SWIHART, *Assistant Professor of Chinese*
Ph.D. (1990), Princeton University [2004]

FRANCISCO VIVAR, *Assistant Professor*
Ph.D. (1996), University of California [2002]

ADJUNCT MEMBERS

MARIE-LISE CHARUE, *Instructor of French*
Ph.D. (1998), University of Connecticut [2001]

ROBERT L. GALLAGHER, *Instructor of Classics*
Ph.D. (1998), Ohio State University [2001]

DAVID S. KING, *Instructor of French*
Ph.D. (1996), Washington University [2001]

MONIQUE MANOPOULOS, *Instructor of French*
Ph.D. (1994), University of Iowa [2001]

KRZYSZTOF SLIWA, *Instructor of Spanish*
Ph.D. (1997), Florida State University [2001]

I. The Department of Foreign Languages and Literatures offers a program leading to the Master of Arts degree in Romance Languages with concentration in either French or Spanish.

II. M.A. Degree Program

A student entering the program will be assigned a major adviser by the chair, and this adviser is to be consulted in all matters concerning the student's program of study. It is the student's responsibility to obtain from the department office copies of the Information Sheet and the Required Reading List for detailed descriptions of requirements.

A. Program Admission

1. A minimum of 24 upper-division semester hours or the equivalent in French, Spanish or a combination of the two.
2. A reasonable proficiency in the language of concentration, to be determined by the department prior to admission.
3. Two letters of recommendation from professors who have taught the applicant.
4. A 3.0 GPA for upper-division courses in the field.
5. Minimum of 450 on the quantitative portion of the GRE.
6. Exceptions to Requirements 1, 4, and 5 may be made with the approval of the coordinator of graduate studies and the department chair.

B. Program Requirements

1. A total of 30 semester hours for candidates writing a thesis.
2. A total of 33 semester hours for candidates not writing a thesis.
3. A minimum of 6 semester hours in the field of Romance Languages and Literatures from the following options:
 - a. Coursework in linguistics offered in the Department of Foreign Languages and Literatures (LING 7101, 7201, FREN 6301, 7401, SPAN 6306, 7301, 7302, 7304, 7305).
 - b. Coursework in the field of Romance Languages and Literatures outside the language of concentration.
4. Up to 9 hours may be taken in a collateral area with prior approval of the coordinator of graduate studies.
5. At least 23 hours must be taken in 7000 level courses.
6. A reading knowledge of a foreign language other than that of the concentration. This may be demonstrated by (a) achieving the forty-fifth (45th) percentile on the Graduate School Foreign Language Test (ETS), (b) achieving a grade of "3.0" or better in a fourth-semester language course (e.g. FREN/GERM/SPAN 2202 or equivalent), (c) achieving a grade of "3.0" or better in a graduate reading course (FREN/GERM 5701 or equivalent), or (d) some other manner approved by the coordinator of graduate studies.
7. A comprehensive written and oral examination after completion of all course work.
8. If a thesis is presented, an oral examination on the area of the thesis is required.

LINGUISTICS (LING)

7101. Introduction to Linguistics I. (3). Nature of language; history of linguistic theory; morphology and syntax, concentrating on languages other than English.

7201. Introduction to Linguistics II. (3). Principles and applications of phonology, with major emphasis on languages other than English; historical linguistics, concentrating on Romance and other language families; psycholinguistics, sociolinguistics, semantics.

FRENCH (FREN)

6301. French Phonetics. (3). The theory and practice of French sounds; especially recommended for teachers of French.

6302. Advanced French Grammar. (3). Practical, syntactical, and lexical usage of contemporary French.

6412. Seventeenth and Eighteenth Centuries. (3). Classical theater and critical theories; essay, nouvelle, and conte in eighteenth century.

6413. Nineteenth Century French Literature. (3). Survey of literary movements and major authors with readings in all the major genres. PREREQUISITE: FREN 3301. RECOMMENDED: FREN 3411.

6414. Twentieth Century French Literature. (3). Survey of literary movements and major authors with readings in the novel, poetry, and theater. PREREQUISITE: FREN 3301 RECOMMENDED: FREN 3411.

7101. French for Business and Economy. (3). Basic vocabulary and institutions necessary for dealing in the French business world. *Open only to students enrolled in International MBA concentration.* PREREQUISITE: Successful completion of proficiency examination.

7102. French for Commerce. (3). Practical training in various aspects of correspondence and communications necessary for conducting business in French-speaking communities. *Open only to students admitted to International MBA concentration.* PREREQUISITE: FREN 7101 or equivalent.

7103. Readings in French Business I. (3). Close reading of a selection of texts on business and economic life of the French-speaking world; emphasis on perfection of reading and writing skills in French. PREREQUISITE: 7102 or equivalent.

7305. French Stylistics. (3). (6305). Way in which texts produce meanings, development of analytic and interpretative skills with which to read the textuality of literary writing and to determine devices which affect its particular expressiveness; examination of vocabulary, syntax structure, and rhetorical figures as literary convention and as deviation from convention.

7401. History of the Language and Old French. (3). Development of the French language from Latin to the early 14th century; structure of Old French in preparation for reading medieval texts. Readings include several *Lais* of Marie de France and *La Chanson de Roland*.

7402. Medieval French Literature. (3). Major genres and authors of the Middle Ages; readings include the roman courtois of Chretien de Troyes, the *Lais* of Marie de France, *le Roman de la Rose*, *Aucassin et Nicolette*, *Le Roman de Renard*, theatre, and lyric poetry from the *trouvers* to Charles d'Orleans and Villon.

7421. The French Renaissance. (3). Changes in aesthetics, poetics, and philosophy as seen in the writings of l'Ecole Lyonnaise, the Pleiade, Rabelais, Montaigne, Calvin, de Navarre, Etienne Jodelle, and Robert Garnier.

7425. Classicism Prior to 1660. (3). Aesthetics and poetics of the baroque and preclassical periods. Selections from the writings of the précieux and baroque poets, Mairat, Rotrou, Saint-Sorlin, Scarron, Sorel, Cyrano de Bergerac. The theater of Corneille; early comedies of Moliere.

7426. Classicism After 1660. (3). The impact of Boileau and *l'Art poetique* in crystallizing classical principles and patterns. Masterpieces of Moliere and Racine. Representative selections from masters of the other genres in this period of French literature.

7470-7479. Special Topics In French Literature. (3). Literary movements, individual authors, or groups of authors of the nineteenth and twentieth centuries.

7491. Seminar In French Literature. (3). Introduction to research through investigations of limited scope. May be repeated for credit.

7492. Research In French Studies. (1-6). May be repeated for credit toward the concentration in French up to a maximum of six hours.

7531. The Age of the Enlightenment. (3). Comprehensive study of literary trends and innovations within the major genres as related to liberal ideas underlying the philosophy of Montesquieu, Voltaire, Diderot, Rousseau, and their contemporaries.

7691. Bibliography and Methods of Research. (1). Examination of bibliographical aids for the study of French literature; problems involved in various types of research; and study of the presentation and documentation of scholarly writing. *Required of all graduate students.*

†7791. The Teaching of French. (1). Required of all graduate assistants in French.

†7792. Practicum in Teaching (1-3). Professional development in teaching of French, including classroom experience, tests and measurement, language proficiency, computer-assisted instruction, and use of audio-visual resources in the classroom. May be repeated. Limited to graduate students in French. PREREQUISITE: Permission of graduate coordinator.

†7793. Reading for Comprehensives. (1-6). Directed readings of required lists as preparation for comprehensive written and oral examination. Arranged on an individual basis. May be repeated. Limited to graduate students in French. PREREQUISITES: Students must have completed 18 hours of graduate work. Permission of graduate coordinator required.

†7996. Thesis. (1-6). The thesis in French carries six semester hours and must be approved by the candidate's thesis committee.

†Grades of S, U, or IP will be given

GERMAN (GERM)

6443. Major German Writers of the Twentieth Century. (3). Selected works of Hesse, Thomas, Mann, Kafka, Frisch, Duerrenmatt, Brecht, and Boeli. PREREQUISITE: two courses from the group GERM 3301, 3302, 3411, 3412; or permission of instructor.

6451. The German Drama. (3). Dramatic literature from sixteenth to twentieth centuries with readings from Reformation, Baroque, Enlightenment, Sturm und Drang, Classicism, Romanticism, Realism, and modern period. PREREQUISITES: Two courses from GERM 3301, 3411, 3412 or permission of instructor.

7101. Advanced Business German I. (3). Intensive work with interpreting and composing German business letters and other correspondence (TELEX, FAX, e-mail), German business organization and accounting practices; maintenance of conversational skills. Course is conducted in German. *Open only to students admitted to International MBA concentration.* PREREQUISITE: Successful completion of proficiency examination.

7102. Advanced Business German II. (3). German business documentation for domestic and foreign trade; finance, banking, role of the Bundesbank; advertising and marketing. Maintenance of conversational skills. Course is conducted in German. *Open only to students admitted to International MBA concentration.* PREREQUISITE: GERM 7101 or equivalent.

7103. Advanced Business German III. (3). Business and West German society 1949-1994; culture and business of the former East Germany; reunification; culture and business practices of other Germanophone countries of Europe (i.e., Austria, Switzerland, etc.); continuation of practice in correspondence and conversation. Conducted primarily in German.

JAPANESE (JAPN)

7101. Advanced Business Japanese I. (3). Vocabulary and institutions necessary for dealing in the Japanese business world. Maintenance and extension of conversational skills to business context. Course is conducted in Japanese. *Open only to students enrolled in International MBA concentration.* PREREQUISITE: Successful completion of proficiency examination.

7102. Advanced Business Japanese II. (3). Business Japanese language skills applied to specific fields of business, which include finance, manufacturing, the tourist industry, etc. Course is conducted

in Japanese. *Open only to students enrolled in International MBA concentration.* PREREQUISITE: JAPN 7101 or equivalent.

7103. Advanced Business Japanese III. (3). Interpreting and composing various letters and documents for conducting business in Japanese. Course is conducted in Japanese. *Open only to students enrolled in International MBA concentration.* PREREQUISITE: JAPN 7102 or equivalent.

SPANISH (SPAN)

6302. Advanced Grammar. (3). Special problems in grammar. Required of all graduate assistants in Spanish and recommended for all M.A. candidates.

6306. Applied Spanish Linguistics. (3). (6501). Current research in linguistics, psycholinguistics, and sociolinguistics and their contribution to second language teaching and second language learning.

6410. Spanish Literature and Civilization. (3). Survey of literary movements and major figures with readings in literature and civilization. Required for all M.A. candidates.

6510. Spanish American Literature and Civilization. (3). Survey of literary movements and major figures with readings in literature and civilization. Required for all M.A. candidates.

7101. Introduction to Hispanic Culture and Business. (3). Hispanic community and family, customs, geography, demography of Spain and Spanish America; United States business in Latin America and Hispanic business in the United States. Course is conducted in Spanish. *Open only to students admitted to International MBA concentration.* PREREQUISITE: Successful completion of proficiency examination.

7102. Commerce in the Hispanic World. (3). Hispanic markets and techniques of penetrating them; international advertising, import-export and economic review of Hispanic nations; history and circumstances of the Hispanic corporate world. Course is conducted in Spanish. *Open only to students admitted to International MBA concentration.* PREREQUISITE: SPAN 7101 or equivalent.

7103. Spanish Commercial Correspondence and Documents I (3). Various letters and documents for conducting business among Hispanic nations. Conducted in Spanish. PREREQUISITE: SPAN 7102 or equivalent.

7201. Workshop on Spanish Language. (3). Idiomatic construction, word formation, culturally connotated vocabulary and modern style techniques through intensive text analysis and writing. RECOMMENDED: SPAN 6302.

7301. Spanish Phonology. (3). (6301). Principles of analysis of the sound system of human language; general sound system (phonetics) of Spanish; and phonemic contrastive analysis of sound systems of Spanish and English.

7302. Spanish Syntax and Semantics. (3). Spanish syntax and compositional semantics: constituent structure, syntactic categories and grammatical relations, prepositional semantics, quantification, modality and tense.

7304. Evolution of Spanish. (3). (6304). General history of the Spanish language based on political and cultural history of Spain and Spanish America. History of sound system, grammatical structures, word borrowings, and changes in meaning.

7305. Spanish American Dialectology. (3). (6305). Fundamental notions of language variation, regional and social varieties, stylistic varieties and linguistic demography of general features of Latin American Spanish with respect to phonology, morphosyntax and semantics.

7420. Medieval Spanish Literature. (3). (6420). Reading of Old Spanish. Medieval Spanish literature from Mozarabic lyric through *La Celestina*.

7421. The Golden Age. (3). *Don Quijote* and other classic works of the sixteenth and seventeenth centuries.

7430. Eighteenth and Nineteenth Century Spanish Literature. (3). (6430). Romantic and post-romantic poetry and drama. Costumbrismo and rise of regional novel, realistic novel, and naturalistic novel.

7431. Studies in 20th Century Peninsular Literature. (3). Spanish drama, prose, and poetry of the twentieth century. Particular attention given to generations of 1898 and 1927 as well as the post-civil war period.

7451. Studies on Spanish Culture. (3). Literary history of Spanish autonomous regions as viewed through important writers; emphasis on regional dialects, character, economy and culture; readings and discussions in Spanish. May be repeated for total of 6 hours. Recommended: SPAN 6410.

7453. Studies on Latin American Culture. (3). Literary survey of social issues that affect perceptions of Latin America, its peculiar problems, and its social upheaval, readings and discussions in Spanish. May be repeated for total of six hours. RECOMMENDED: SPAN 6510.

7532. Spanish American Drama. (3). (6532). Development of the drama in Spanish America, with an emphasis on the twentieth century. PREREQUISITE: Permission of instructor.

7561. Pre-Contemporary Spanish American Prose Fiction. (3). Evolution of the Spanish American novel and short story from their beginnings through early twentieth century.

7562. Contemporary Spanish American Prose Fiction. (3). Representative Spanish American novels and short stories of the twentieth century since 1940.

7591. Seminar in Spanish American Literature. (3). Topics in Spanish American literature designed to be of special interest for the advanced graduate student. May be repeated up to nine hours.

7691. Research in Hispanic Studies. (1-6). May be repeated for credit toward the concentration in Spanish up to twelve hours.

7790-7799. Special Topics in Hispanic Literature and Linguistics. (3). Selected topics in Hispanic literature and linguistics, may include, but not limited to Latin-American short fiction, nineteenth century Peninsular literature, Latin-American drama, and variety of sociolinguistic studies. May be repeated for total of 6 credit hours.

†7891. Teaching of Spanish. (3). Methodology, theory, practice of teaching a foreign language. Credit not applicable to major. May be repeated. Limited to graduate students in Spanish. PREREQUISITE: Permission of graduate coordinator.

†7892. Bibliography and Methods of Research. (3). Examination of bibliographical aids for study of Hispanic literature or Spanish linguistics, or both; problems involved in various types of research and study of the presentation and documentation of scholarly writing. May be repeated. Limited to graduate students in Romance Languages. PREREQUISITE: Permission of graduate coordinator.

†7893. Professional Development Seminar for Romance Language Majors. (3). Presentation of scholarly work by faculty, graduate students, and visiting professors, writers. May be repeated. Limited to graduate students in Romance Languages. PREREQUISITE: Permission of graduate coordinator.

†7894. Reading for Comprehensives. (1-6). Directed readings of the required lists as preparation for the comprehensive written and oral examination. Arranged on an individual basis. May be repeated. Limited to graduate students in Romance Languages. PREREQUISITE: Permission of graduate coordinator and 18 hours of graduate work.

†7996. Thesis. (1-6). The thesis in Spanish carries six semester hours and must be approved by the candidate's thesis committee.

LANGUAGES AND LITERATURES (LALI)

6010-29. Special Topics in Foreign Literatures. (3). Topics are varied and announced in *Schedule of Classes*.

6441. Dante. (3). *Vita Nuova* and *Divina Commedia*; presented in English.

7780. Individual Studies in Business Foreign Language. (1-3). Directed individual study in selected areas of language and culture chosen in consultation with instructor. Repeatable up to ten semester hours. PREREQUISITE: Permission of instructor.

†Grades of S, U, or IP will be given

Geography and Planning

HSIANG-TE KUNG, Ph.D., *Chair*
Room 107, Johnson Hall

CLIFTON DIXON, Ph.D.,
Coordinator of Graduate Studies—Geography
Room 204, Johnson Hall
(901) 678-2386

E-mail: kunght@cc.memphis.edu

GENE PEARSON, A.I.C.P.,
Director and Coordinator of Graduate Studies—
City and Regional Planning
Room 226, Johnson Hall
(901) 678-2161

E-mail: gpearson@cc.memphis.edu
WWW: <http://lrgis.memphis.edu/~master/>

MEMBERS

REZA BANAI, *Professor*

Ph.D. (1983), University of Pennsylvania [2002]

HSIANG-TE KUNG, *Professor Geography and Planning*

Ph.D. (1980), University of Tennessee [2004]

ASSOCIATE MEMBERS

LUZ DE SELENIA BURRELL, *Associate Professor*

M.P. (1970), University of Iowa [2004]

CLIFTON DIXON, *Associate Professor*

Ph.D. (1988), Texas A&M University [2005]

JOHN KUPFER, *Assistant Professor*

Ph.D. (1994), University of Iowa [2000]

W. THEODORE MEALOR, JR., *Professor*

Ph.D. (1973), University of Georgia [2005]

E. EUGENE PEARSON, *Associate Professor*

MURP (1971), University of Mississippi [2004]

SUSAN ROAKES, *Assistant Professor*

Ph.D. (1991), University of Wisconsin-Madison [2004]

GEOGRAPHY

I. The Department of Geography offers graduate programs leading to the Master of Arts and the Master of Science degrees.

II. M.A. and M.S. Degree Programs

A. Program Admission

Contingent upon admission to the Graduate School and the approval of the departmental chair and the departmental graduate faculty. All applicants must take the GRE for department admission. All applicants need three letters of recommendation sent to the graduate coordinator, as well as a personal letter of intent. Applications and information for all admission requirements can be obtained from the graduate coordinator. Students not having undergraduate credit for geographic techniques must take a techniques course (65—/75—) at its earliest offering. Students not having undergraduate credit in regional geography must include at least one regional course in their graduate program.

B. Program Requirements (M.A. and M.S.)

1. Satisfactory completion of GEOG 7801
2. Completion of either Option I or Option II.
 - a. Option I: minimum of 27 semester hours and a six-hour thesis. At least 23 semester hours of courses must be taken at the 7000 level.
 - b. Option II: minimum of 36 semester hours including one research paper of professional quality and acceptable format. At least 25 semester hours of courses must be taken at the 7000 level. Each student must take GEOG 7900.
3. One three semester hour graduate course (6000 or 7000 level) from each of the core areas:
 - a. Environmental and earth sciences: 61—, 62—, 71—, 72— numbered courses
 - b. Human-economic geography: 64—, 74— numbered courses
 - c. Geographic techniques: 65—, 75— numbered courses. Students not submitting acceptable undergraduate credit in quantitative methods or statistics will be required to take GEOG 6521.
4. Each student should submit a degree program plan to the graduate faculty after completion of 9 semester hours of graduate course work.
5. In consultation with the adviser, each student should select a guidance committee by the completion of 18 semester hours of graduate course work.

6. The thesis proposal should be submitted to the adviser by completion of 18 hours of graduate course work.

7. Successful completion of an oral and written comprehensive examination; not to be taken prior to the registration for the 18th semester credit hour. A separate defense of the Thesis is required for those students electing Option I. Students electing Option II must orally present their professional paper.

The M.S. degree will be awarded only to those students submitting a minimum of 12 semester hours of course work from the combined areas of environmental and earth science and geographic techniques.

GEOGRAPHY (GEOG)

6122. Environmental and Earth Science: The Soil. (3). Processes and dynamics of soil profile development. Major models of soil development examined and applied to soil genesis in Tennessee. Application of soil techniques to archaeology, planning, earth sciences, and soil conservation and erosion problems. Emphasis on field and laboratory techniques with field work in soil mapping and soil taxonomy. *Two lecture, two laboratory hours per week.*

6201. Urbanization and Environment. (3). (Same as PLAN 6201). A study of the ways humans have changed the natural environment by urbanization and how physical features and processes influence the development and function of cities.

6211. Climatology. (3). Study of climatic elements and methods of data analysis; application of climatology in agriculture, health, economics, and architecture. **PREREQUISITE:** GEOG 1001 and PHYS 2001 and 2110.

6215. Physical Climatology. (3). Components of earth's energy balance; emphasis on solar radiation, heat transfer, and evapotranspiration. **PREREQUISITES:** GEOG 1001 and PHYS 2001 and 2111.

6231. Water Resources. (3). (Same as PLAN 6231). Study of hydrologic processes and their application to needs of cities, industry, agriculture, and recreation.

6241. Biogeography. (3). Principles underlying spatial distribution of plants, including physical, biotic, and historical controls; vegetation dynamics; survey of patterns and processes of North American vegetation.

6251. Environmental Issues and Natural Hazards. (3). Interrelationships between human beings and natural hazards; importance of policy decisions; planet-wide climatic changes, potential changes in earth-sun relations, inadequate food production, local disasters, and nuclear contamination.

6271. Park Resource Protection and Management I. (4). Concepts of geography and psychology required for resource protection and visitor management positions as park rangers in federal and state parks. Classroom instruction, readings, and applied practical exercises. **PREREQUISITE:** Permission of instructor.

6272. Park Resource Protection and Management II. (4). Advanced content and skills involved in protecting natural resources and managing park visitor behavior in recreation areas; knowledge and skill-building in natural resource law, enforcement skills, and advanced interpersonal development. **PREREQUISITE:** GEOG 6271 and permission of instructor.

6304. Geography of Europe. (3). A geographic analysis of the physical, cultural, and economic characteristics of Europe.

6306. Geography of Asia. (3). Significance of regional differences in Japan, China, and India, and a brief survey of the remaining areas.

6313. Geography of the United States and Canada. (3). Physical, cultural, and economic characteristics of the United States and Canada.

6316. Geography of the South. (3). Selected regions in the South with emphasis on changes and trends in the cultural-physical complex.

6318. Geography of American National Parks. (3). Individual types of parks with regard to location, physical characteristics, and use; history and mission of the National Park Service with regard to management of national parks past and present; implications for future public land management strategies.

6324. Geography of Middle America. (3). Peoples and places of Mexico, Central America, and the Caribbean; history of Mayan and Aztec culture; contemporary development issues, and the region's global situation.

6325. Geography of South America. (3). Lands and peoples of the diverse regions of South America. Folk populations, Amazonia, Andean issues; contemporary economics and resources in a developing world region.

6431. Urban Geography. (3). Allocation of land for urban uses; the adjustments and adaptations to existing physical phenomena; the patterns, functions, and forms of specific urban land areas; and some of the continuous problems of urban development and growth.

6443. Transportation Planning. (3). (Same as PLAN 6443). Planning for various transportation modes and networks and impact on urban land-use and contemporary development problems.

6502. Computer Mapping. (3). (Same as PLAN 6502). Instruction in use of computer mapping programs as effective techniques for visual presentation of a wide variety of data. *Two lecture, two laboratory hours per week.*

6503. Map Design and Production. (3). Cartographic theory and application to thematic mapping; use of computer for creation, editing, proofing, and reproduction of maps. *Two lecture, two laboratory hours per week.*

6510. Aerial Photo Interpretation. (3). (Same as GEOL 6510). Systematic treatment of elements and steps involved in interpreting, measuring, and mapping of images appearing on aerial photographs. *Two lecture, two laboratory hours per week.*

6511. Remote Sensing of the Environment. (3). (Same as GEOL 6512). Survey of theory and application; using color infrared, thermal, and radar images generated from satellites for geographic, environmental, and planning purposes. *Two lecture, two laboratory hours per week.* PREREQUISITE: GEOG 4510/6510 or consent of instructor.

6514. Geographic Information Systems. (3). (Same as PLAN 6514). Role and nature of using interactive computer mapping for decision support in resource management; structure and use of spatial databases in the decision process. *Two lecture, and two laboratory hours per week.* PREREQUISITE: GEOG 3514 or consent of instructor.

6521. Quantitative Methods. (3). (Same as PLAN 6521). Introduction to quantitative methods in spatial analysis. PREREQUISITE: Permission of instructor.

6524. Advanced Geographic Information Systems. (3). Database manipulation, data interface, and cartographic modeling techniques with emphasis on customizing GIS applications and automated modeling procedures; use and manipulation of commercially available data as sources for GIS applications. *Two lecture, two laboratory hours per week.* PREREQUISITE: GEOG 4514 or 6514 or consent of instructor.

6531. Field Methods. (3). Basic methods of geographic analysis used in classifying, analyzing, and reporting field generated data including field mapping, sampling procedures, questionnaires, and archival and public document research. *One and one-half lecture, three hours laboratory hours per week.*

6610-19. Special Topics in Geography. (1-3). Topics are varied and announced in *Schedule of Classes*.

†6700. Geography Internship. (1-9). Provides opportunity to gain experience working with an agency in which geographic knowledge can be utilized. Repeatable to a maximum of 9 hours. Credit allowed only after acceptance of report. PREREQUISITE: Approval of instructor and chair.

7111-8111. Seminar in Climatology. (3). Discussion of major topics in climatology, including: climate change, el nino, ozone, depletion, acid rain, urban heat islands, and other topics. PREREQUISITE: GEOG 6211.

7120-8120. Seminar in Geomorphology. (3). Analysis and application of major geomorphic models; threshold, episodic, time-space, systems, and magnitude; frequency principles examined in both classroom and field; dating techniques applied to geomorphic interpretations; individual and team projects required.

7201-8201. Environmental Analysis Seminar. (3). (Same as PLAN 7302). Analytical and qualitative critique of the physical environment with emphasis on environmental quality, including air and water quality standards, soil erosion, solid waste management, and nuisance control.

7221-8221. Seminar in Conservation. (3). Selected areas of study in conservation, including overpopulation, deforestation, desertifica-

tion, food shortages, pollution, and soil erosion. May be repeated with change in content for total of 6 hours credit.

7231-8231. Seminar in Water Resources. (3). Issues, problems, and research on selected topics of surface and groundwater, water uses, and fluvial process.

7241-8241. Seminar in Biogeography. (3). Major topics and research problems in biogeography; may include vegetation dynamics, vegetation history, or regional issues.

7301-8301. Seminar in Regional Geography. (3). Regional analysis of selected areas of the world including: the U.S, Canada, Europe, former Soviet Union, Middle America, South America, Asia, Africa, and Oceania. May be repeated with a change in content for a total of six hours.

7316-8316. Seminar in the U.S. South. (3). Systematic analysis of distinctive physical and human phenomena characteristic of the U.S. South.

7430-8430. Seminar in Economic Geography. (3). Selected topics in economic geography. Subjects studied will vary. May be repeated with change in content for a total of 6 hours credit.

7431-8431. Seminar in Urban Geography. (3). A study of the spatial aspects of urban development and the analysis of selected urban problems.

7434-8434. Seminar in Land Use. (3). Systematic analysis of suburban and rural land use characteristics, patterns, and problems. Focus on U.S.

7471-8471. Cultural Geography. (3). A systematic analysis of the manner in which selected culture traits interact with other patterned phenomena to produce distinctive geographic landscapes. Individual student study on selected problems is an integral part of this course.

7503-8503. Seminar in Cartography. (3). Selected areas of study of current research in cartography. Topics may include digital mapping, map communications, global positioning systems, or other related topics. May be repeated with a change of content for a total of 6 hours credit.

7504-8504. Seminar in Geographic Information Systems. (3). (Same as PLAN 7504). Implementation and management of GIS technology; design, automation, and applications to land-use and natural resource inventories.

7511-8511. Seminar in Remote Sensing. (3). Use of remote sensing technology for solving environmental problems; state-of-the-art techniques and methods of image processing.

7541-8541. Field Studies in Geography. (1-6). Faculty conducted field trip emphasizing study of geographical phenomena; location will vary; topics may include physical landscapes, land-use patterns, cross-cultural analysis, micro and regional economics, or other geographical processes. Credit hours are based on length of time in field. Requires research and written report. May be repeated with a change in content for maximum of 6 hours. PREREQUISITES: Permission of instructor and completion of special registration.

7621. Independent Study. (1-3). Independent investigation of a research problem selected in consultation with the instructor. May be repeated for a maximum of 6 credit hours.

†7631. Seminar for Teaching Assistants. (3). Overview and practical demonstrations of the art of teaching geography; includes physical, cultural, and regional geography topics. Required of all teaching assistants.

†7641. Reading for Comprehensive Examinations. (1-6). Arranged on an individual basis for geography graduate students only. PREREQUISITE: Completion of 18 hours of coursework.

†7651. Graduate Colloquium. (3). Presentation of scholarly research activity, examination of contemporary issues in geography, and participation in departmental colloquia. Repeatable to maximum of six hours.

7801. Geographic Thought and Methodology. (3). Introduces student to major philosophies of geography and to methods of geographic research.

7811-8811. Geography for Teachers. (3). Application of geographic principles in teaching social studies and earth sciences. Emphasis on geography of Memphis and Mid-South.

†7900. Professional Paper. (1) Preparation and presentation of research paper.

†7996. Thesis. (1-6). Student must research, write, and defend a thesis on a topic approved by major professor and advisory committee.

†Grades of S, U, or IP will be given

CITY AND REGIONAL PLANNING

I. M.C.R.P. Degree Program

A. Program Admission—Applicants must satisfy admission standards of the Graduate School and receive favorable endorsement from the planning faculty. Admission will be based on applicable test scores (GRE or MAT); undergraduate grade point average; previous education and/or experience; and ability to articulate career and education objectives.

B. Program Prerequisite—Students are accepted from all undergraduate disciplines and professional areas; however, the department determines if students must do remedial work. Some credit may be granted by the department for remedial work if obtained at the graduate level after entering the program.

C. Program Requirements—The student is required to complete a minimum of 48 semester hours. Thirty (30) hours are taken in the core curriculum and 15 hours are electives that lead to a 3-hour Capstone Project. The fifteen (15) hours of electives allow the student to extend basic knowledge gained in the core curriculum and can include such subjects as economic development planning, urban design, land use and transportation planning, planning information systems, housing and community development planning, planning law, and environmental planning.

The 3-hour Capstone Project, submitted as a written report and orally defended, is required of all majors as a terminal experience designed to demonstrate a student's mastery of planning process and substance.

The comprehensive examination must be successfully completed at the end of the semester in which the student expects to graduate.

D. Transfer of Credits—The Director may recommend to the Graduate Dean credit for planning course work successfully completed at other institutions but not to exceed 12 semester hours. For those students formerly enrolled in graduate planning programs accredited by the Planning Accreditation Board, a maximum of 24 hours in planning course work may be approved.

E. Planning Profession—Planning uses a multi-disciplinary approach to solve urban and regional problems. As such planning is concerned with the spatial arrangement and interaction of human activity systems in urbanized areas and enables the arrangement of facilities and programs in an optimal and comprehensive way. As a professional practice, planning is concerned with guiding the growth and development of cities and regions toward desired objectives. Planning increases the effectiveness of public and private decision-making by giving careful consideration to goal formulation, the collection and organization of information and knowledge, and the design of policies and programs. The curriculum is intended to provide the basic knowledge and skills in theory, techniques, methods and practice. The program is a full member of the Association of Collegiate Schools of Planning, and its degree is accredited by the Planning Accreditation Board.

CITY AND REGIONAL PLANNING (PLAN)

CORE CURRICULUM

6521. Quantitative Methods. (3). (Same as GEOG 6521). An introduction to quantitative methods in spatial analysis.

7000. Introduction to Planning. (3). Planning trends in United States and abroad, including land use planning, developmental planning, social planning, transportation planning, community facilities planning, and planning as a governmental activity at the local, state, and federal levels.

7002. City Planning Principles and Theory. (3). The fundamental principles and theory of urban and regional planning with emphasis on comprehensive planning processes and appropriate theoretical foundations.

7004. Land Use Controls. (3). Methods of regulating land use, including zoning, subdivision controls, and growth management techniques; legal framework for planning, including enabling legislation, local ordinances, and significant judicial decisions.

7006. Comprehensive Planning Studio. (3). Individual and group practice in collection, analysis, and presentation of field data on selected planning problems.

7007. Special Projects Studio. (3). Individual and group planning for development of major public and private projects.

7008. Site Planning. (3). Principles and methods of preparing site plan for development project, including techniques of determining site-

ability of site resources and compatibility of land uses, site impact analysis, and site plan review procedures.

7011. Financing Community Development. (3). Introduction to and principles of municipal finance with emphasis on preparation of capital improvements program; methods of forecasting public revenues and expenditures, project selection methods, and review of financing mechanisms.

7012. Methodology and Techniques in Planning. (3). Professional practice methodology used in assessment of existing socioeconomic conditions of communities, trend analysis, and forecasts of future population and employment for purpose of developing comprehensive plan.

7202. Land Use Planning. (3). Theory and practice of land use planning, with emphasis on methods of land use analysis and economic and social bases for land use decisions.

ELECTIVES

6201. Urbanization and Environment. (3). (Same as GEOG 6201). A study of the ways humans have changed the natural environment by urbanization and how physical features and processes influence the development and function of cities.

6231. Water Resources. (3). (Same as GEOG 6231). Study of hydrologic processes and their application to needs of cities, industry, agriculture, and recreation.

6443. Transportation Planning. (3). (Same as GEOG 6443). Planning for various transportation modes and networks and impact they have on urban land use and contemporary development problems.

6502. Computer Mapping. (3). (Same as GEOG 6502). Instruction in use of computer mapping programs as effective techniques for visual presentation of a wide variety of data. *Two lecture, two laboratory hours per week.* PREREQUISITE: BASIC, FORTRAN, or other computer language.

6514. Geographic Information Systems. (3). (Same as GEOG 6514). Role and nature of using interactive computer mapping for decision support in resource management; structure and use of spatial databases in the decision process. *Two lecture, and two laboratory hours per week.*

7101. Regional Planning. (3). Area and region delineation, regional planning organization, the various levels of planning, the functions and problems of regional plan preparation and plan implementation.

7201. Community Facilities Planning. (3). Planning the location and design of community facilities in the light of changing concepts of public service and community organization.

7204. Urban Revitalization Planning. (3). Changing urban land uses, first in areas which must improve or rebuild obsolete patterns, functions, and forms; and second in areas with acceptable uses, structures, and institutions, which in the interest and welfare of all the people must have additional space for growth and expansion.

7205. Seminar in Urban Design. (3). History and theory of urban form and implications for the design of cities; survey of urban design techniques.

7206. Housing. (3). Survey of housing market characteristics, financing, development, preservation, and redevelopment from both public and private perspectives.

7302. Environmental Analysis Seminar. (3). (Same as GEOG 7201). Analytical and qualitative critique of the physical environment with emphasis on environmental quality, including air and water quality standards, soil erosion, solid waste management, and nuisance control.

7504. Seminar in Geographic Information Systems. (3). (Same as GEOG 7504). Implementation and management of GIS technology; design, automation, and applications to land use and natural resources inventories.

7701. Research Problems. (1-3). Independent investigation directed toward research problems in city and regional planning. May be repeated for a maximum of 3 hours credit.

7708. Planning Practice. (3). Practical skills in operating a planning office in both public and private sectors. PREREQUISITE: Approved planning experience.

†7896. Capstone Project. (1,2,3). Preparation of a research paper that exhibits mastery of process and substantive area of planning.

†Grades of S, U, or IP will be given

Geological Sciences

GEORGE H. SWIHART, Ph.D., *Chair*
Room 402, J. M. Smith Building

DANIEL LARSEN, Ph.D.,
Coordinator of Graduate Studies
(901) 678-4358

E-mail: dlarsen@memphis.edu
www.people.memphis.edu/~geolsci/

MEMBERS

- PAUL BODIN, *Assistant Professor*
Ph.D. (1992), University of Colorado [2000]
- JER-MING CHIU, *Professor*
Ph.D. (1982), Cornell University [2000]
- WAI-YING CHUNG, *Associate Professor*
Ph.D. (1978), California Institute of Technology [1999]
- MICHAEL ELLIS, *Associate Professor*
Ph.D. (1984), Washington State University [2004]
- GISELLE RUIZ-GOLDSTEIN, *Professor*
Ph.D. (1986), Tulane University [2003]
- JOAN GOMBERG, *Associate Professor*
Ph.D. (1986), University of California, San Diego [2000]
- ARCHIBALD C. JOHNSTON, *Professor*
Ph.D. (1979), University of Colorado [1999]
- DAVID N. LUMSDEN, *Professor*
Ph.D. (1965), University of Illinois [2000]
- JOSE PUJOL, *Associate Professor*
Ph.D. (1985), University of Wyoming [2001]
- PAUL A. RYDELEK, *Assistant Professor*
Ph.D. (1983) University of California at Los Angeles [1999]
- EUGENE SCHWEIG, III, *Assistant Professor*
Ph.D. (1985), Stanford University [2004]
- ROBERT F. SMALLEY, JR., *Associate Professor*
Ph.D. (1988), Cornell University [2000]
- GEORGE H. SWIHART, *Associate Professor*
Ph.D. (1987), University of Chicago [1999]
- ROY B. VAN ARSDALE, *Professor*
Ph.D. (1979), University of Utah [1999]

ASSOCIATE MEMBER

- DANIEL LARSEN, *Assistant Professor*
Ph.D. (1994), University of New Mexico [2001]

ADJUNCT MEMBERS

- JAMES DORMAN, *Emeritus*
Ph.D. (1961), Columbia University [1999]
- MICHAEL A. GIBSON
Ph.D. (1988), University of Tennessee [2001]

I. The Department of Geological Sciences offers a graduate program leading to the Master of Science degree with a major in Geological Sciences and concentrations in Geology and Geophysics, and the Doctor of Philosophy degree with a major in Geophysics.

II. M.S. Degree Program

A. Program Admission

1. Acceptable score on Graduate Record Examination.
2. An undergraduate degree in geological sciences, physics, chemistry or mathematics. Students holding a bachelor's degree in other disciplines will be considered on an individual basis.
3. Candidates. Applicants meeting minimum requirements will be accepted into a candidate pool. Pool members will be ranked and accepted up to the capacity of the department.

B. Program Requirements

1. 2 semester hours selected from Seminar in Geology (GEOL 7701) or Seminar in Geophysics (GEOP 7701).
2. Geology Concentration: 12 semester hours selected from Geology courses (GEOL). Students may be required to make up deficiencies as determined on an individual basis.
Geophysics Concentration: GEOP 6101, 6401, 7601, 7602, 7375, and either GEOP 7440 or GEOL 7311. In addition, students from outside geological sciences may be requested to make up deficiencies in one or more of Structural Geology (GEOL 3512), Field Geology (GEOL 4622),

Advanced Physical Geology (GEOL 6111) and other courses as determined on an individual basis.

3. Thesis (GEOL 7996 or GEOP 7996) 6 semester hours.
4. Electives selected in consultation with the major professor to complete 32 semester hours.
5. At least 22 hours at or above 7000 level (includes thesis), but including no more than 9 hours of seminar courses except by consent of the Committee.
6. Residency. A student must attend full time for at least one year, defined as two consecutive semesters.
7. Progress. The department chair will meet with the student to advise and consent on his or her progress at the end of the first academic year (defined as the end of the semester in which the student completes 16 hours; not to include hours needed to make up deficiencies).

Students in the M.S. Degree program are required to consult with their graduate adviser shortly after matriculation in order to become familiar with requirements. Within the second semester, in consultation with their adviser, the student must formulate and present a thesis proposal acceptable to their advisory committee. The successful M.S. candidate will complete a research project in consultation with the advisory committee, submit a thesis of publishable quality describing the results of the research, and orally present and defend the thesis.

III. Ph.D. Degree Program (Major in Geophysics)

A. Nature of the Program

The doctorate prepares the student for a research career, primarily by establishing a broad knowledge of the basic areas of physics and mathematics, and through the experience of successfully completing a comprehensive unit of original research. Dissertation research tends to be interdisciplinary and may involve topics such as seismotectonics, seismicity, wave propagation phenomena, earth structure, earth physics, as well as other areas approved by the Student Advisory Committee. Methodology may involve field measurements, remote sensing, seismic instrumentation, seismogram interpretation, discrete signal processing, and elastic theory, among other disciplines. The prescribed examinations will permit the student to demonstrate mastery of the appropriate fields. The individual curriculum will reflect the student's preparation, the needs of the dissertation topic selected, and will assure a strong general knowledge of earth science.

B. Program Admission

1. A minimum score of 650 on the quantitative section of the GRE plus adequate language skills (550 TOEFL).
2. An undergraduate or advanced degree in geology, mathematics, physical sciences, or engineering. For a geology major, the minimum preparation in physical science will be a two or three semester calculus-based course in physics. For a physical science or engineering major, mathematics through differential equations will be considered the minimum preparation. Additional undergraduate preparation in mathematics and physical science or engineering is advisable. The general quality of each applicant's academic record will be reviewed as a key to their ability to complete the doctoral requirements. Evidence of computer literacy will be considered relevant.
3. Geophysics is a quantitative and interdisciplinary science. Applicants with a bachelor's degree and an academic record of quality in a relevant field may proceed with a graduate program; those deficient in mathematics, but otherwise showing promise, may be admitted with a requirement of additional mathematics and physics preparation, without graduate credit.

C. Program Requirements

1. A minimum of 72 semester hours of credit beyond the bachelor's degree. Of the required total, 36 semester hours of credit, exclusive of dissertation and advanced study courses, must be obtained from courses in geophysics, geology, mathematics, physics, or engineering departments on advice of the student's graduate adviser. For students from outside the geological sciences, additional preparation in general geology, including a course in structural geology, will be required. Other courses may be required to make up deficiencies as determined on an individual basis and through the qualifying examination.
2. During the first semester, a qualifying examination will be given to incoming graduate students. This examination is diagnostic in nature and will test each student's preparation, and will aid in planning the individual course requirements.
3. After the completion of required course work, the student must pass a comprehensive examination covering the major field of geophysics and the specific areas of knowledge required for completion of the dissertation. Admission to candidacy will be recommended to the Graduate School by the student's advisory committee upon completion of course work, qualifying examination, and comprehensive examination.
4. Each Ph.D. candidate must complete an original research project, submit a written dissertation of publishable quality describing the results of the research, and orally present and defend the research before the advisory committee.

Core Course Requirements

1. Students are expected to take the following required courses:
MATH 7375-76 Methods of Mathematical Physics
GEOP 7112 Advanced Geophysics
GEOL 7311 Tectonics

2. Plus three of the following courses (or equivalent credit):
 - GEOP 6201 Applied Geophysics
 - GEOP 7402 Earthquake Seismology
 - GEOP 7440 Active Tectonics
 - GEOP 7601 Studies in Seismogram Reading
 - GEOP 7602 Geophysics Time Series Analysis
 - GEOP 8401 Advanced Seismology
 - GEOP 8601 Inverse Methods in Geophysics
 - PHYS 7100 Classical Mechanics
 - PHYS 7300 Electrodynamics
3. No more than 9 hours of seminar courses may be included in the total required credit hours except by consent of the Committee. A student who takes 9 hours of seminars in the M.S. Degree program may also take 9 hours of seminars in the Ph.D Degree program.

GEOLOGY (GEOL)

6010-19. Special Topics in Geological Sciences. (3). Topics vary and are announced in the *Schedule of Classes*.

6202. Geomorphology. (4). Description, origin, and interpretation of landforms and their relationships to underlying structure and geologic history; processes acting on earth's surface including active tectonics, weathering, mass-wasting, climate change, and fluvial, shoreline, and glacial processes. *Three lecture, two laboratory hours per week.* PREREQUISITE: GEOL 1103.

6211. Physical Hydrogeology. (4). Physical hydrogeology and development of groundwater; groundwater in hydrologic cycle; aquifer characteristics and tests. *Three lectures and two laboratory hours each week.* PREREQUISITES: GEOL 1103 and one semester of calculus.

6332. Introduction to Geochemistry. (3). Geological and chemical processes which govern or control the migration and distribution of the elements and atomic species in the earth in space and time. *Three lecture hours per week.* PREREQUISITE: CHEM 1131.

6341. Aqueous Geochemistry. (3). Physical chemistry of aqueous solutions as it applies to geochemical processes on earth's surface. PREREQUISITE: CHEM 1131.

6351. Advanced Structural Geology. (3). Analysis of crustal structures: stress and strain in rocks, mechanical behavior of earth materials, mechanical interpretation of crustal structures. PREREQUISITE: GEOL 3512, MATH 1321.

6510. Aerial Photo Interpretation. (3). (Same as GEOG 6510). Systematic treatment of elements and steps involved in interpreting, measuring, and mapping of images appearing on aerial photographs. *Two lecture, two laboratory hours per week.*

6512. Remote Sensing of the Environment. (3). (Same as GEOG 6511). Survey of theory and application of using color, infrared, thermal, and radar images generated from satellites for geographic, geologic, environmental, and planning purposes. *Two lecture, two laboratory hours per week.* PREREQUISITE: GEOG 6510 or permission of instructor.

6701. Spring Field Trip. (1-2). Conducted field trips during spring vacation. About 30 hours of field work will follow 2-4 hours of lectures. Open to non-majors. Among the areas which may be included are Ouachita-Arbuckle-Wichita mountains of Oklahoma; Ouachita, and adjacent mineral districts; central and southern Appalachians; and Gulf Coastal Plain. Check *Schedule of Classes* for specific location. NOTE: May be repeated three times when location varies. A total of no more than 8 hours credit may be earned. PREREQUISITE: Permission of instructor.

7010-19. Special Topics in Geology. (1-3). PREREQUISITE: Consent of instructor.

7100. Basin Analysis. (3). Integration of depositional models using subsurface correlation, seismic stratigraphy, and biostratigraphy in analysis of basin-scale sedimentary systems and their fluids. *Two lecture, two laboratory hours per week.* PREREQUISITE: GEOL 3712.

7102. Electron Beam Analysis. (3). Introduction to scanning electron microscopy and electron beam microanalysis. *One lecture, four laboratory hours per week.* PREREQUISITE: CHEM 1102 or CHEM 1132 and permission of instructor.

7140. Environmental Geochemistry. (3). Inorganic and organic geochemical concepts applied to transport and fate of contaminants in surface water, ground water, and sediment. *Three lecture hours per week.* PREREQUISITE: GEOL 6341 or permission of instructor.

7150. X-Ray Diffraction Techniques. (3). Application of X-ray diffraction techniques to crystallographic problems. *One lecture and four laboratory hours per week.* PREREQUISITE: GEOL 3311 and permission of instructor.

7160. Sediment Diagenesis and Clay Mineralogy. (3). (GEOL 7340). Investigation of physical, geochemical, and mineralogical changes in sediments as they undergo lithification, from the earth's surface to sedimentary basins; changes in the composition and structure of fine-grained layer silicates are a major focus. *Two lecture and two laboratory hours per week.* PREREQUISITE: GEOL 3311 and permission of instructor.

7170. Sedimentary Petrology. (4). (GEOL 7352). Sedimentary rocks in the field, hand specimen, and through the microscope with view of explaining sedimentary rock classification, post depositional changes that occur in sediments and the bearing these factors have on geology as whole. *Three lecture and two laboratory hours per week.* PREREQUISITE: GEOL 3311, GEOL 3712, and permission of instructor.

7180. Economic Mineral Deposits. (3). (GEOL 7511). Origin, occurrence, and composition of metallic and non-metallic mineral deposits. *Three lecture hours per week.* PREREQUISITE: GEOL 3311 and permission of instructor.

7190. Igneous and Metamorphic Petrology. (4). Description and interpretation of igneous and metamorphic rocks through study of thin sections. *Two lecture, four laboratory hours per week.* PREREQUISITE: GEOL 3312 or equivalent.

7202. Quaternary Geology. (3). Synthesis of geomorphologic, stratigraphic, and geochronologic methods used to understand global glacial and interglacial climate fluctuations during last two million years. *Three lecture hours per week.* PREREQUISITE: Permission of instructor.

7301. Geologic Data Analysis. (3). Use of the computer in data file construction and management, use of file with various programs, and use of statistical tests, regression lines, maps, and a classification of data sets with the aid of the computer. *Two lecture and two laboratory hours per week.* PREREQUISITE: COMP 1200 and permission of instructor.

7311. Tectonics. (3). Principles and geometry of plate tectonics; development of plate tectonic theory; relationship between plate motions and regional tectonics; structural, stratigraphic, magmatic, and geophysical features of various tectonic regimes. PREREQUISITE: GEOL 3512 or equivalent.

7320. Individual Study in Environmental Geology. (1-4). Directed laboratory or field research project selected in consultation with instructor. Report required. PREREQUISITE: GEOL 1101 and permission of instructor.

7350. Individual Study in Paleontology. (1-4). Directed laboratory or field research project selected in consultation with instructor. Report required. Hours and credits to be arranged. PREREQUISITE: Permission of instructor.

+7360. Individual Study in Mineralogy and Crystallography. (1-4). Directed laboratory or field research project selected in consultation with instructor. Report required. Hours and credits to be arranged. PREREQUISITE: Permission of instructor.

+7370. Individual Study in Petrology. (1-4). Directed laboratory or field research project selected in consultation with instructor. Report required. Hours and credits to be arranged. PREREQUISITE: Permission of instructor.

+7380. Individual Study in Geomorphology. (1-4). Directed work selected in consultation with instructor. Hours and credit to be arranged. Report required. PREREQUISITE: Permission of instructor.

7400. Advanced Field Methods. (3). Conducted two to five day field studies in Geology. Topics will vary according to location and faculty interest. May be repeated. Only three (3) credits may be applied to major. PREREQUISITE: Permission of instructor.

+7410. Methods in Geology Lab Instruction. (1-4). Pedagogic methods used in teaching introductory geology labs. PREREQUISITE: Permission of instructor

+7420 Lab Safety. (1-4). Use of department equipment; chemical and radiation safety. PREREQUISITE: Permission of instructor.

+7701. Seminar in Geology. (1).

†7710. **Individual Study in Tectonics.** (1-4). Directed laboratory or field research project selected in consultation with instructor. Report required. Hours and credits to be arranged. PREREQUISITE: Permission of instructor.

†7996. **Thesis.** (1-6).

†Grades of S, U, or IP will be given

GEOPHYSICS (GEOP)

6101. **Introduction to Geophysics.** (3). Fundamental topics include: earth's age and thermal state; main gravity and magnetic fields; elements of seismic wave propagation; dynamic models of earth's interior; comparison of terrestrial planets. PREREQUISITES: PHYS 2111 and MATH 1321.

6111. **Advanced Physical Geology.** (3). Geology for geophysicists from an advanced quantitative viewpoint; earth as planet: its structure, physical and chemical environment, materials and processes on the surface and interior, evolution from geological and physical methods of study. PREREQUISITE: Permission of instructor.

6201. **Applied Geophysics.** (4). Survey of geophysical prospecting methods, seismic reflection and refraction techniques, and electrical, magnetic, and gravity field measurements; emphasis on fundamental principles governing acquisition and interpretation of geophysical data. *Three lecture, two laboratory hours per week.*

6401. **Introduction to Seismology.** (3). Introductory treatment of elastic stress and strain, elastic wave equation, reflection and refraction of seismic waves, seismic body and surface waves in a spherical earth, seismic rays and travel time, fault plane solutions, earthquake location; introduction to the earthquake source, inverse problems and signal processing. *Two lecture and two laboratory hours per week.* PREREQUISITE: Calculus through differential equations and linear algebra, or permission of instructor.

7010-7019. **Special Topics in Geophysics.** (1-3).

7112. **Advanced Geophysics.** (3). Planetary perspective on global geophysics; constitution of earth's interior; earth's gravity and magnetic fields, thermal state; marine geophysics. PREREQUISITE: GEOL 6101 or permission of instructor.

7353. **Geodynamics.** (3). Application of continuum physics to study of geological and geophysical problems in the earth; quantitative models developed to investigate various geophysical phenomena such as deformation, heat transfer, gravitational effects, viscoelastic effects and earthquake faulting. PREREQUISITE: GEOL 6351 or permission of instructor.

7375. **Methods of Mathematical Physics I.** (3). (Same as MATH 7375). Vector space, matrices, tensors, vector fields, function spaces, differential and integral operators, transform theory, partial differential equations. PREREQUISITE: MATH 3391, 4242 and 4350 or permission of the instructor.

7376. **Methods of Mathematical Physics II.** (3). (Same as MATH 7376). Complex variables, asymptotic expansions, special functions, calculus of variations, additional topics on matrices and operators, topics in non-linear analysis. PREREQUISITE: MATH 7375.

7400. **Advanced Field Methods.** (3). Conducted two to five day field studies in Geophysics. Topics will vary according to location and faculty interest. May be repeated. Only three credit hours applicable to major. Required for graduate assistants. PREREQUISITE: Permission of instructor.

7402. **Earthquake Seismology.** (3). Advanced treatment of seismic sources and wave propagation. Topics include analysis of stress and strain, vector solutions of the wave equation, reflection and refraction of plane waves, surface waves in simple media, anelastic attenuation. PREREQUISITE: GEOP 6401 and 7375, or permission of instructor.

7440. **Active Tectonics.** (3). Examination of the role of earthquake seismology in understanding active tectonic features on or near the surface of the earth. PREREQUISITE: GEOP 6401 or permission of instructor.

†7601. **Studies in Seismogram Reading.** (1). Seismogram interpretation of recent earthquakes recorded by instruments of CERl and Global Digital Seismic Network. PREREQUISITE: Permission of instructor.

7602. **Geophysics Time Series Analysis.** (GEOL 7358). Fundamentals of digital processing of geophysical data, both purely mathematical and applied aspects with attention to digital seismograms and gravity and magnetic data.

7701. **Seminar in Geophysics.** (1). (GEOL 7641).

7702-8702. **Seminar in Seismology.** (1-3).

7703-8703. **Seminar in Geodesy.** (1-3).

7704-8704. **Seminar in Active Tectonics.** (1-3).

7705-8705. **Seminar in Mountain Building Processes.** (1-3).

7706-8706. **Seminar in Fracture Mechanics.** (1-3).

†7750. **Individual Study in Geophysics.** (1-4). (GEOL 7550). Directed work selected in consultation with instructor. Report required. Hours and credit to be arranged.

†7996. **Thesis.** (1-6).

8010-19. **Special Topics in Geophysics.** (1-3).

8401. **Advanced Seismology.** (3). (Continuation of GEOP 7402). Surface waves in vertically heterogeneous media, matrix methods for waves in layered media, seismic ray tracing, reflection and refraction of spherical waves, Lamb's problem, integral solutions of the wave equation, generalized ray theory, seismic source theory. PREREQUISITE: GEOP 7402 and GEOP 7376 or permission of instructor.

8601. **Inverse Methods in Geophysics.** (3). Methods used to determine earth parameters from geophysical observations; applications of probability theory, solution of linear problems and iterative solution of nonlinear problems; students will solve an inverse problem in their field of interest. PREREQUISITE: Permission of instructor.

8701. **Advanced Seminar in Geophysics.** (1).

8750. **Advanced Study in Geophysics** (1-9). Independent research in consultation with student's graduate advisor. Report required. Hours and credit to be arranged.

†9000. **Dissertation.** (1-9).

†Grades of S, U, or IP will be given

History

KENNETH W. GOINGS, Ph.D., *Chair*
Room 100 Mitchell Hall

JAMES BLYTHE, Ph.D.,
Coordinator of Graduate Studies
(901) 678-2515

E-mail: arand@memphis.edu
http://www.people.memphis.edu/~history/

MEMBERS

CALVIN H. ALLEN, JR., *Associate Professor*

Ph.D. (1978), University of Washington [2000]

STEVEN BENIN, *Associate Professor*

Ph.D. (1980), University of California-Berkeley [2000]

JAMES BLYTHE, *Associate Professor*

Ph.D. (1987), Cornell University [2000]

WALTER R. BROWN, *Associate Professor*

Ph.D. (1973), Emory University [2000]

CHARLES WANN CRAWFORD, *Professor*

Ph.D. (1968), University of Mississippi [2000]

JAMES E. FICKLE, *Professor*

Ph.D. (1970), Louisiana State University [2004]

KENNETH W. GOINGS, *Professor*

Ph.D. (1977), Princeton University [2001]

JOSEPH M. HAWES, *Professor*

Ph.D. (1969), University of Texas at Austin [2002]

FORREST JACK HURLEY, *Professor*

Ph.D. (1971), Tulane University [2000]

ABRAHAM DAVID KRIEDEL, *Professor*

Ph.D. (1965), Duke University [2000]

WILLIAM J. MURNANE, JR., *Professor*

Ph.D. (1973), University of Chicago [2000]

D'ANN R. PENNER, *Assistant Professor*

Ph.D. (1995), University of California-Berkeley [2004]

JANANN SHERMAN, *Assistant Professor*

Ph.D. (1993), Rutgers University [2000]

CARL EDWARD SKEEN, *Professor*

Ph.D. (1966), Ohio State University [2000]

LUNG-KEE SUN, *Associate Professor*

Ph.D. (1985), Stanford University [2000]

DAVID MILTON TUCKER, *Professor*

Ph.D. (1965), University of Iowa [2001]

ASSOCIATE MEMBERS

BEVERLY BOND, *Assistant Professor*

Ph.D. (1996), University of Memphis [2002]

MARGARET M. CAFFREY, *Associate Professor*

Ph.D. (1986), University of Texas at Austin [2002]

ROBERT J. FRANKLE, *Associate Professor*

Ph.D. (1970), University of Wisconsin [2001]

I. The Department of History offers programs of study leading to the Master of Arts degree and the Doctor of Philosophy degree with a major in History.

II. M.A. Degree Program

The M.A. program of study in history is a flexible one that prepares students for a variety of careers. Students who regard the M.A. as a terminal degree normally elect to fulfill its requirements by 33 hours of course enrollment without writing a thesis. Most of these students go on to teaching positions on the secondary and community college level; a lesser number enter government service at all levels; and some secure specialized positions in business, industry, and journalism. Those students preparing for teaching on the university level or related careers in research and writing should look upon the M.A. program as preparation for advanced graduate study. They are thus strongly urged to fulfill the requirements of the M.A. program by the preparation of a thesis.

A. Program Prerequisites

The student is required to have a minimum of 18 semester hours in undergraduate history with a minimum GPA of 3.0 on a 4-point scale in all undergraduate history courses. In special cases an exception may be made with the approval of the Graduate Coordinator in History. The department will normally consider for admission only students with a GRE verbal score of at least 450, with a quantitative and analytical score acceptable to the department, or an MAT score of at least 45. In unusual circumstances, other students may be admitted contingent on their maintaining a minimum 3.0 GPA while taking a minimum of six credits of graduate courses in history during their first semester.

B. Program Requirements

1. A total of 33 hours for the student who elects not to write a thesis.
2. A total of 30 hours for the student who elects to write a thesis, with 6 hours of credit being assigned to the thesis.
3. No more than 9 hours may be taken at the 6000 level.
4. History 7000, a History 7070 seminar, and at least 12 hours (for students writing a thesis; this includes 6 hours of 7996 thesis credit) or 15 hours (for non-thesis students) from 7011, 7012 (3 hours maximum), and 7120 through 7980. All students who do not write an M.A. thesis are required to complete at least one additional 7070 seminar in their 15-hour requirement.
5. Normally 6 hours may be taken in a field outside history, with the approval of the student's adviser and the Coordinator of Graduate Studies. Under special circumstances students may petition for up to an additional 6 hours.
6. No more than 21 hours may be taken in United States History, European History, or any one field of history, such as Ancient History.
7. A comprehensive examination over course work given by a committee chosen by the Graduate Adviser and the student.
8. Thesis approval by a department committee headed by the faculty member who directed the preparation of the thesis.

III. Ph.D. Degree Program

The Department of History also offers a program of study built upon the M.A. degree leading to the Ph.D. degree. The program is designed to provide wide knowledge in three fields, more intensive preparation in a fourth field, and professional competence in original research and writing that will prepare the student for teaching and research in higher education or for a career in government, business, library service, and other research related fields.

A. Program Admission: We normally evaluate applicants for the Ph.D. program once each year, in March, for admission in the Fall semester. Although the Graduate Studies Committee may consider the application of a promising student at another time, February 15 is the deadline by which we must receive all the application materials of anyone who wishes to be considered for an assistantship. We will consider applications according to the following criteria:

1. A minimum of 24 graduate hours in history with at least a 3.25 GPA (on a 4.0 scale) from an accredited institution. An M.A. in history is strongly recommended.
2. GRE verbal score of at least 500, with a quantitative and analytical score acceptable to the department.
3. A 750-1000 word "Statement of Purpose," in which the applicant states educational goals, anticipated fields of study, and general research interests. In this statement, the candidate will be expected to demonstrate some familiarity with the history department's program.
4. Three letters of recommendation.

All application materials will be considered by the Graduate Studies Committee, with input invited from department members who might serve on the applicant's advisory committee. The Graduate Studies Committee will decide to admit the applicant to Early Doctoral status, to admit the applicant conditionally (limited to a single semester with a maximum of nine hours of course work), or to reject the application. Applicants will also be considered automatically for a graduate assistantship at this time. Admission decisions will be made by April 1. Limited departmental resources may require that the department limit the number of new candidates admitted to the program.

B. Advising: Students admitted into the Ph.D. program in history will be advised by the Coordinator of Graduate Studies when they first enroll. During the first semester enrolled each student will choose an advisory committee to be composed of a major professor with full graduate faculty rank and at least two other faculty members. This committee assists the student in determining such matters as fields of study, the choice of courses, acceptance of transfer credit, and acceptance of credit from the master's degree. All committee decisions will be in writing with copies to the student and to the Graduate Coordinator.

C. Foreign Language: The student must demonstrate reading proficiency in one foreign language directly related to the dissertation field. Proficiency will be demonstrated by the student's ability to read and interpret a selection from a historical work or source assigned by the dissertation committee. At the option of the student's dissertation director, the student may be required to demonstrate reading knowledge in two or more foreign languages.

D. Fields of Study: The student will choose, in consultation with the adviser, four fields of study. One will be designated the dissertation field. As determined by the advisory committee, a student will complete a minimum of eighteen semester hours of credit in the major field, plus twelve hours of dissertation. In each of the three minor fields, the student will complete a minimum of twelve hours of credit. With the approval of the adviser, and the formal approval in writing of the Coordinator of Graduate Studies, the student may choose one minor field that is either interdisciplinary in content (at least three disciplines represented, two in the case of Egyptology) or outside the history department. Dissertation fields are offered in United States before 1877, United States after 1877, Ancient World, Britain, and Modern Europe, with minor fields in (in addition to the above) Medieval-Renaissance Europe, Early Modern Europe, Latin America, Africa, China and Japan, Russia, and Near East. Normally a dissertation in Ancient History must be in the area of Egyptology. Upon approval of a petition to the Graduate Studies Committee from both the student and a prospective dissertation director, a dissertation may be completed in a field that is not normally a dissertation field.

E. Course Requirements: A student must complete a minimum of 60 semester hours of graduate course work beyond the bachelor's degree, excluding credit received for thesis and dissertation. At least 36 hours of regular course work must be taken in residence at The University of Memphis and be distributed among the fields of study in a way best suited to prepare the student for comprehensive examination. At least 12 hours of this enrollment must be in research seminars. Students who complete a master's thesis in history may count it as one of these seminars. History 8000 and History 8011, or their equivalents are required of all students. History 8012 (Directed Readings) may be repeated for a total of 6 hours of credit, with an additional 6 hours permitted by petition to the Graduate Studies Committee. At least 39 hours of the 60-hour requirement must be completed at the 7000/8000 level. A student who makes a grade lower than B (3.0) in more than 6 hours of course work will be dropped from the Ph.D. program.

F. Comprehensive Examination: When the course work has been essentially completed, the language requirement satisfied, and other foregoing requirements met, the student will take a Comprehensive Examination over all fields. The examination will be given by a Comprehensive Committee selected by the adviser and student and approved by the Graduate Studies Committee. The Comprehensive Committee should be composed of one faculty member from each minor field and two faculty members from the dissertation field. On the written part of the examination, six hours will be allotted to the dissertation field and four hours to each of the minor fields. A student may retake any part of the examination not passed, but failure after two attempts in two or more parts of the examination will result in automatic failure of the examination. If all parts are passed, the Comprehensive Committee may elect to waive the oral portion of the examination. Otherwise, following an oral examination, the Comprehensive Committee will decide whether, with the approval of at least 4 of the 5 members, the student should be promoted to late doctoral status or dropped from the program. This oral examination normally must be completed within two weeks after the last written examination, although the Comprehensive Committee may extend this period in exceptional circumstances. Upon successful completion of the comprehensive examination, the coordinator of graduate studies will notify the Graduate School of the student's late doctoral status.

G. Dissertation: To complete the requirements for the Ph.D. in History, the student must prepare a dissertation based on a substantial amount of original research and submitted in the acceptable form. The dissertation topic will be determined by the student in consultation with a faculty member in the dissertation field who agrees to direct the research. Formal approval of the dissertation will be given by a Dissertation Committee of at least five members, chaired by the director and at least two other members with full graduate faculty status. Final approval is given by the Graduate Studies Committee. The student will be given 12 hours of History 9000 credit for the dissertation.

HISTORY (HIST)

6020. Internship In History. (3-12). Supervised internships working with various governmental agencies, private foundations or businesses of interest to historians. May be repeated for a maximum of 12 hours credit. **PREREQUISITE:** Permission of department.

6022. Oral History. (3). Applied history covering oral history theory, research, and interviewing procedures.

6050-69. Special Topics in History. (1-3). Intensive study of selected topics in History. Topics announced in *Schedule of Classes*.

6126. Victorian and Edwardian England. (3). Social, political, and cultural adjustments of England to the experience of industrialization in nineteenth and early twentieth centuries.

6145. History of Modern Germany. (3). Germany from the origins of the unification movement in the Napoleonic Era through the Second World War.

6160. Russia to 1917. (3). Russia from earliest times to 1917, with special emphasis on the rise of serfdom and autocracy and the evolution of the Revolutionary Movement.

6162. History of the Soviet Union. (3). The 1917 Revolution and the major developments in government economy, cultural and social life, and international affairs which followed.

6200. History of Spain. (3). Spanish institutions, culture, and politics from ancient times to the present.

6240. History of Mexico. (3). Political, economic, social, and cultural development of Mexico from ancient times to the present.

6250. History of Brazil. (3). Political, economic, social, and cultural development of Brazil from early times to the present.

6260. The World Since 1945. (3). Global, ideological, economic, and political developments since World War II. Emphasis on rising affluence of industrial free market, movement of former colonies to independence, and growth in diversity among the Soviet bloc nations.

6272. Modern Middle East. (3). Political, diplomatic, social, and religious developments in Middle East from 1800 to present.

6273. Islamic Egypt. (3). Political, economic, social, and cultural development of Egypt from Islamic conquest (640 A.D.) to present.

6285. Africa: Antiquity and Tradition. (3). African history from ancient civilizations to Sudanic kingdoms. Social, political, economic, intellectual, and cultural developments of Africa from the earliest human records to era of the great states of the western Sudan. Emphasis on African ecumena, traditions of the major regions of the continent.

6286. Africa: Continuity and Flux. (3). African history in the period of globalization, from the slave trade to colonialism. Social, political, economic, intellectual, and cultural developments of Africa; Africa's involvement in the Atlantic world. Coverage of the major regions of the continent, with emphasis on precolonial topics.

6287. Africa: Twentieth Century. (3). Colonialism and nationalism in Africa. History of colonial and post-independence periods, with a focus on examining major issues in modern African history from modern African intellectual perspectives. Emphasis on nationalist and pan-Africanist analytical frameworks.

6292. History of Modern China, 1800 to the Present. (3).

6294. History of Modern Japan, 1800 to the Present. (3).

6295. Intellectual History of East Asia since 1800. (3). Evolution of modern Chinese and Japanese thought.

6320. Ancient Near East. (3). From the beginnings in Mesopotamia down through the great "Oriental Empires" (Assyria, Babylon, Persia).

6321. The Greek Experience. (3). Politics, society, and culture in ancient Greece to Alexander the Great.

6322. The Roman World. (3). Hellenistic kingdoms and Roman Empire.

6323. Egypt of the Pharaohs. (3). A historical survey of ancient Egyptian civilization, covering major political and social developments and topics such as religion, writing, and literature, Egypt's relations with the rest of Africa, and sample problems that illustrate how Egyptologists approach the past.

6361. History of the Byzantine Empire. (3). Byzantine or East Roman Empire from 330 to 1453 and its influence on the Slavic, Turkic, and Islamic peoples.

6372. High Middle Ages. (3). Summary of the Early Middle Ages, economic, technological, cultural, intellectual, and religious expansion after 1000, courtly love, Romanesque and Gothic art, limited government, church and state conflicts, reason vs revelation, universities, scholasticism, women, Judaism, science, Franciscans, Heretics, life of ordinary people, disasters of the fourteenth century, roots of the Renaissance.

6380. Renaissance Europe, 1300-1520. (3). Rise of humanism during fourteenth century disasters. Intellectual, economic, social, cultural, religious, and artistic developments of fourteenth through sixteenth century, emphasizing Italy, especially Florence. Women, life of ordinary people, guilds, republicanism and despotism, neoplatonism, Christian and civic humanism, Northern Renaissance. Is the Renaissance revolutionary or a development of medieval culture?

6390. Europe in the Age of the Reformation. (3). Characteristic political, social, economic, intellectual, and cultural developments and the religious conflicts of the late fifteenth and sixteenth centuries.

6401. Europe in the Age of the Baroque. (3). Political crises, the development of monarchical absolutism, the rise of modern science, and the cultural synthesis in the seventeenth century.

6440. Era of the French Revolution. (3). Old Regime, origins and development of Enlightenment thought, and revolutionary and counter-revolutionary movements in 18th century Europe.

6453. Europe, 1815-1914. (3). Note: Students who have received credit for HIST 6451 or 6452 will not be allowed credit for HIST 6453.

6461. Europe, 1914-1945. (3).

6620. Colonial America to 1783. (3). Political development and economic, social and cultural institutions of English colonies in America, including origins and conduct of American Revolution.

6630. The New Nation, 1783-1815. (3). Note: Students who have received credit for HIST 6641 will not be allowed credit for HIST 6630.

6640. Jacksonian America, 1815-1850. (3). Note: Students who have received credit for HIST 6642 will not be allowed credit for HIST 6640.

6670. Civil War and Reconstruction, 1850-1877. (3). Note: Students who have received credit for HIST 6660 will not be allowed credit for HIST 6670.

6680. Emergence of Modern America, 1877-1914. (3).

6701. The United States, 1914 to the Second World War. (3).

6702. The United States, from the Second World War. (3).

6823. American Labor History. (3). Historical development of the labor movement in the United States. Emphasis on social, economic, and political trends related to the labor movement.

6824. Business History. (3). Historical development of business in the United States. Attention to social, economic, and political trends related to American business communities.

6831. History of American Family. (3). Analysis of changes in family size and structure and relationships between family and society from colonial times to present.

6851. History of Women in America. (3). Economic, political, social, and intellectual history of women in the English American colonies and the United States.

6861. Parks/People/Public Policy. (3). A comparative study of the history and administration of public land areas in the United States and of American conservation.

6863. **History of Childhood in America.** (3). Historical consideration of children and childhood in American society from early 17th century to present.

6871. **United States Urban History.** (3). Development of American cities, including formation of local social, economic, and political institutions and impact of urbanization on U.S.

6881. **Black American History.** (3). History and culture of African Americans in light of their experiences; aspects of African American life and attitudes of dominant society within which African Americans lived; ways African American men and women shaped and nurtured their own lives, culture, and history in U.S. [G].

6882. **Civil Rights Movement in the U.S. Since 1930.** (3). Struggle for African-American equality, with emphasis on key civil rights issues, events, leaders, and strategies.

6941. **History of the American Indian.** (3). Role of the Indian in American History.

7000-8000. **Introduction to Historical Research and Writing.** (3). Mechanical techniques of historical composition, the nature and use of various kinds of historical source materials, bibliographical aids, and methods of historical synthesis. Required of all history majors.

7011-8011. **Philosophy of History.** (3). Speculative philosophy of history and recent problems in analytical philosophy of history.

7012-8012. **Directed Readings.** (1-3). Arranged on an individual basis between a student and a particular instructor, whose permission is required for scheduling the course. Master's candidates may take the course for 3 hours credit. May be repeated for a total of 6 hours credit by students admitted to doctoral program.

7020-8020. **Seminar for Teaching Assistants.** (3). Overview and practical demonstrations of art of teaching history. Required of all graduate assistants.

†7021-8021. **Colloquium for Graduate Assistants.** (3). Supervision of and consultation with graduate assistants. For history students only. PREREQUISITES: HIST 7020-8020 and appointment as graduate assistant. May be repeated.

7030-39-8030-39. **Topics in History.** (3). Topics within periods or problems that cross periods or subject areas. May be repeated when topic varies.

7070-8070. **Research Seminar.** (1-3). Emphasis on original research and writing in topics drawn from the fields generally covered by the Studies courses. May be repeated for credit with departmental approval. PREREQUISITE: HIST 7000.

The following Studies courses consist of readings and reports to survey the important literature on a period or its principal divisions. May be repeated with departmental permission.

7120-8120. **Studies in English History.** (3).

7160-8160. **Studies in Russian History.** (3).

7210-8210. **Studies in Latin-American History.** (3).

7270-8270. **Studies in Near Eastern History.** (3).

7280-8280. **Studies in African History.** (3).

7290-8290. **Studies in Asian History.** (3).

7320-8320. **Studies in Ancient History.** (3).

7370-8370. **Studies in Medieval-Renaissance European History.** (3).

7400-8400. **Studies in Early Modern European History.** (3).

7440-8440. **Studies in Modern European History.** (3).

7650-8650. **Studies in U.S. History before 1877.** (3).

7680-8680. **Studies in U.S. History after 1877.** (3).

7883-8883. **Studies in African American History.** (3).

7980-8980. **Thematic Studies in American History.** (3).

†7990-8990. **Reading for Comprehensives.** (1-6). Arranged on an individual basis for history students only.

†7996. **Thesis.** (1-6). The student must write and defend satisfactorily a thesis on a subject approved by the major professor.

†9000. **Doctoral Dissertation.** (1-12). No more than 12 hours may be applied toward degree. PREREQUISITE: Admission to candidacy.

†Grades of S, U, or IP will be given

Mathematical Sciences

JOHN HADDOCK, Ph.D., *Chair*
Room 373 Winfield Dunn Building

F. BOTELHO, Ph.D.,
Coordinator of Graduate Studies

E-mail: dept@msci.memphis.edu
http://www.msci.memphis.edu/

MEMBERS

- GEORGE ANASTASSIOU, *Professor*
Ph.D. (1984), University of Rochester [2000]
- BÉLA BOLLOBÁS, *Hardin Chair in Combinatorics*
Ph.D. (1971), Sc.D. (1984), Cambridge University [2002]
- FERNANDA BOTELHO, *Associate Professor*
Ph.D. (1988), University of California-Berkley [2002]
- JAMES T. CAMPBELL, *Associate Professor*
Ph.D. (1984), University of North Carolina at Chapel Hill [2004]
- GAUTAM DAS, *Associate Professor*
Ph.D. (1990), University of Wisconsin-Madison [2002]
- DIPANKAR DASGUPTA, *Assistant Professor*
Ph.D. (1994), The University of Strathclyde-Glasgow, United Kingdom [2004]
- LIH-YUAN DENG, *Professor*
Ph.D. (1984), University of Wisconsin-Madison [2001]
- RALPH JASPER FAUDREE JR., *Professor*
Ph.D. (1964), Purdue University [2000]
- STANLEY PHILLIP FRANKLIN, *Professor*
Ph.D. (1963), University of California-Los Angeles [2000]
- MAXIMILIANO H. GARZON, *Professor*
Ph.D. (1984), University of Illinois-Urbana [2000]
- EBENEZER OLUSEGUN GEORGE, *Professor*
Ph.D. (1977), University of Rochester [2002]
- JEROME A. GOLDSTEIN, *Professor*
Ph.D. (1967), Carnegie Mellon University [2000]
- GISELLE RUIZ-GOLDSTEIN, *Professor*
Ph.D. (1986), Tulane University [2003]
- JOHN R. HADDOCK, *Professor, Chair*
Ph.D. (1970), Southern Illinois University [2000]
- X. JOAN HU, *Assistant Professor*
Ph.D. (1995), University of Waterloo, Canada [2004]
- YINXI HUANG, *Associate Professor*
Ph.D. (1989), University of Alberta, Canada [2003]
- JAMES E. JAMISON, *Professor*
Ph.D. (1970), University of Missouri-Rolla [2000]
- ANNA KAMINSKA, *Professor*
Ph.D. (1986), A. Michiewicz University [2002]
- PEI-KEE LIN, *Professor*
Ph.D. (1980), Ohio State University [2000]
- JONATHAN I. MALETIC, *Assistant Professor*
Ph.D. (1995), Wayne State University [2004]
- GIRI NARASIMHAN, *Associate Professor*
Ph.D. (1989), University of Wisconsin-Madison [2002]
- EDWARD ORDMAN, *Associate Professor*
Ph.D. (1969), Princeton University [2000]
- ANTHONY QUAS, *Assistant Professor*
Ph.D. (1993), University of Warwick, England [2004]
- CECIL C. ROUSSEAU, *Professor*
Ph.D. (1968), Texas A&M University [2000]
- RICHARD H. SCHELP, *Professor*
Ph.D. (1970), Kansas State University [2000]
- WILLIAM R. SCHMITT, *Associate Professor*
Ph.D. (1986), Massachusetts Institute of Technology [1998]
- BOXIN TANG, *Assistant Professor*
Ph.D. (1992), University of Waterloo, Canada [2004]
- SEOK PIN WONG, *Professor*
Ph.D. (1967), University of Illinois [2000]

ASSOCIATE MEMBERS

- KING-IP LIN, *Assistant Professor*
Ph.D. (1996), University of Maryland-College Park [2002]

PAUL TROW, Associate Professor
Ph.D. (1985), University of North Carolina at Chapel [2002]

ADJUNCT MEMBERS

JAMES BOYETT
Ph.D. (1974), Michigan State University [1999]
DEO SRIVASTAVA
Ph.D. (1993), University of Rochester [1999]

I. The Department of Mathematical Sciences offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees with a major in Mathematical Sciences.

The areas of concentration for the M.S. degree are Applied Mathematics, Computer Science, Mathematics, and Statistics. Within the M.S. degree, students may complete up to twelve semester hours in a collateral area approved by their adviser.

The areas of concentration for the Doctor of Philosophy degree are Applied Statistics, Computer Science, and Mathematics.

II. M.S. Degree Program

Admission Requirements

- GRE scores are an important factor for admission.
- Two letters of recommendation
- A minimum score of 550 on the TOEFL, or 210 on the computer-based TOEFL, (for students whose native language is not English)
- An undergraduate degree with a minimum GPA of 2.5 on a 4.0 scale

Program Requirements

- At least 24 semester hours at the 7000 level
 - A passing grade on a written comprehensive examination
- Each of the concentration areas has additional program prerequisites and requirements, which are given below.

Mathematics Concentration

A. Prerequisite

An undergraduate degree with a major in mathematics or equivalent training.

B. Requirements

- Satisfactory completion of 33 semester hours of graduate course work in a program approved by the department.
- Satisfactory completion of at least 21 semester hours of graduate course work in mathematics (A typical program will include at least two of the following two course sequences: MATH 7350-7351, 7261-7262, 7411-7361).

Computer Science Concentration

A. Prerequisites

- One year (8 semester hours) of calculus and one semester (3 semester hours) of linear algebra. (A student without the calculus and/or linear algebra prerequisites can be admitted on a provisional basis.)
 - Satisfactory completion of the following courses (or their equivalents): COMP 1900, 2150, 3160, 3410, 4030, 4040, 4270; 4601; MATH 2701.
- (None of the courses above may be used to fulfill degree requirements.)

B. Requirements

- Satisfactory completion of 34 semester hours of graduate course work approved by the department.
- Satisfactory completion of a minimum of 22 semester hours of computer science courses approved by the department. In addition to COMP 6601, they must include at least six different courses, selected in pairs from three of the following areas:
 - Algorithms and Complexity: COMP 7295, 7601, 7713, 7715, 7717, 7290;
 - Programming and Software Systems: COMP 6041, 6081, 7041, 7081, 7082, 7711;
 - Database Systems: COMP 7115, 7116, 7117, 7118, 7120;
 - Data Communications and Networking: COMP 7120, 7311, 7313, 7327;
 - Parallel Computing: COMP 7272, 7274, 7813;
 - Artificial intelligence: COMP 6720, 6730, 7282, 7517, 7720, 7740, 7750, 7760;
 - Complex systems and cognitive science: COMP 7515, 7517, 7601, 7740, 7760, 7820.

Statistics Concentration

A. Prerequisites

Three semesters of calculus and one semester of linear algebra

B. Requirements

- Satisfactory completion of 30 semester hours of graduate course work with a thesis or 33 semester hours of graduate course work without a thesis in a program approved by the department.
- Satisfactory completion of the following courses: MATH 7642, 7643, 7647, 7654, 7685, 7762, and either MATH 7645 or MATH 7657, either MATH 7660 or MATH 7670. Graduate students in the Department of Mathematical Sciences may not receive credit for both MATH 6637 and MATH 7643.

Applied Mathematics Concentration

A. Prerequisites

Undergraduate preparation which includes work in ordinary and partial differential equations, linear algebra, advanced calculus and numerical analysis (Students lacking this background may be admitted provisionally and be required to take one or more of the following courses: MATH 6391, 6242, 6350, 6721.)

B. Requirements

Satisfactory completion of at least 33 semester hours of graduate course work in a program approved by the department which includes MATH 7321, 7721, and 7995

III. Ph.D. Degree Programs

Admission Requirements

- GRE scores are an important factor for admission.
- Three letters of recommendation
- A score of at least 550 on the TOEFL, or 210 on the computer-based TOEFL, (for students whose native language is not English)
- An undergraduate degree in an appropriate discipline with a minimum GPA of 2.5 (on a 4.0 scale) or equivalent preparation

Program Requirements

- A passing grade on a qualifying examination prior to the end of the first 13 months of study in the program
- At least two consecutive semesters of residence as a full-time student
- At least 42 semester hours in 7000 or 8000 level courses, with a minimum of 18 semester hours at the 8000 level
- A passing grade on a comprehensive examination
- Completion of an acceptable dissertation
- A passing grade on a final examination given by a committee composed of departmental and university representatives
- Each student must obtain approval of a program of study prior to the end of the first full year of study in the program
- Satisfactory completion of concentration requirements which include:

Mathematics Concentration

Demonstration of reading proficiency in one foreign language, either French, German, or Russian

The Ph.D. concentration in mathematics is designed so that students may pursue a traditional degree or may choose a more broadly based program aimed toward a college teaching career. Students may contact the department for more detailed information.

Applied Statistics Concentration

- Students must complete the following courses: MATH 7-8642, 7-8651, 7-8670, 7-8692, 7-8695, and two courses from MATH 7-8759, 7-8763, 7-8764, and 7-8765. In addition, students are required to give at least two formal presentations through taking MATH 7-8691.
- Presentation of an acceptable dissertation proposal within six months after passing the comprehensive examination.

Computer Science Concentration

- Satisfactory completion of courses from at least two substantially different areas of computer science. In each area the student must complete a sequence of at least three courses.
- Presentation of an acceptable dissertation proposal after passing the comprehensive examination.

COMPUTER SCIENCES (COMP)

6001. Computer Programming. (3). Basic concepts in computer programming in BASIC and FORTRAN, including software development cycle, data types, iteration and flow control commands, modular programming, I/O, file processing; basic skills for using operating systems (DOS, VMS), visual basic, computer systems, and network navigation. NOTE: *Computer Science majors may not use this course to fulfill degree requirements.* PREREQUISITE: MATH 1211.

6002. Accelerated Computer Programming. (3). Principles of style and documentation: specification, algorithms, coding, and step-wise refinement; structured language; modularity; recursive procedures; programming of basic data structures including linked lists, stacks, queues, trees, and sets; basic sort and search algorithms; hashing. PREREQUISITE: MATH 1321. COREQUISITE: MATH 6701 or 4701.

6003. Computer Organization and Assembly Language Programming. (3). Binary signals, combinatorial and sequential logic networks; computer structure, memory, control, processing, and I/O units; instruction types and execution. Computer machine language: symbolic coding and assembly systems: design, coding, testing, tracing, and debugging. NOTE: Computer Science majors may not use COMP 6003 to fulfill degree requirements. NOTE: Credit for either COMP 3230 or COMP 3420 precludes credit for COMP 6003. PREREQUISITE: COMP 2150 or 6002.

6030. Introduction to Algorithms. (3). Asymptotic behavior of programs; basic paradigms in algorithm design: greedy, divide-and-conquer, dynamic programming; analysis of efficiency and optimality of representative algorithms, including graph, pattern matching, numerical, randomized, and approximation algorithms; approaches to lower bound analysis; basic parallel algorithms. PREREQUISITE: COMP 2150.

6040. Programming Languages. (3). Comparative features, syntax, and applicability of high-level programming languages such as FORTRAN, COBOL, PASCAL, SNOBOL, LISP, ADA, C, and FORTH data types and data structures and dataflow, procedures, recursion, runtime environment, string manipulation, list processing, array processing, documentation, programming style. PREREQUISITE: COMP 2150 or 6002.

6041. Introduction to Compilers. (3). Finite state recognizers, lexical scanners, symbol tables, context-free methods such as recursive descent, LL(K), precedence, LR(K), SLR(K); language translation, generation and improvement of machine independent codes, inherited and synthesized attributes syntax directed translation schema. PREREQUISITES: COMP 6003, 6040 and 6030.

6081. Software Development. (3-6). Advanced programming methods: testing, generic libraries, documentation methods; program analysis and design methodologies such as object-oriented, life cycles, metrics, process improvement strategies, personal software process; software quality. PREREQUISITE: COMP 6040, or permission of instructor.

6115. Database Processing and Design. (3). Database processing and architecture; conceptual data modeling and data design; logical data models; relational models, operations and algebra; query languages and SQL; normalization and schema refinement; basic indexing techniques (hashing and B+ trees). PREREQUISITE: COMP 3160, or permission of instructor.

6242. Introduction to Computer Graphics. (3). Characteristics of graphics I/O devices; 2D pictures, scaling, translation, rotation, windowing; drawing histograms, simple maps, block diagrams and flowcharts; curved lines, precision, quantization, interpolation, plotting equations; 3D pictures, scaling, translation, rotation, projections, hidden line problem, non-Euclidean geometry, animation. PREREQUISITE: COMP 3420 or 6003.

6262. Programming in UNIX. (3). Fundamentals of UNIX system and environment including: file system, shell concepts and programming, editors (VI and EMACS), filters (SED, AWK, GREP, SORT), utilities (MAKE, YACC, LEX), mail facility, communication software, C programming and its UNIX interface, X window system. PREREQUISITE: COMP 2150 or permission of instructor.

6270. Introduction to Operating Systems. (3). Hierarchy of storage devices, I/O buffering, interrupts, channels; multi-programming, processor and job scheduling, memory management: paging, segmentation, virtual memory; management of asynchronous processes: interrupt procedure calls, process stateword and automatic switch instructions, semaphores, concurrency; security and recovery procedures. PREREQUISITES: COMP 6003, 6040, and 6030.

6302. Internet Applications and Java Programming (3). Structure of the internet and world-wide web; client-server environments; programming applications in Java and HTML; java applets and web's cgi scripts; security issues; other large networks. PREREQUISITE: COMP 2150.

6310. Data Communications. (3). Network structure and architecture; network topology: OSI/ISO reference model: physical layer and datalink layer, communications lines; Fourier analysis and synthesis; modulation; transmission media; coding theory; data compression, cryptography, error detection and correction; case studies of LANs: CSMA/CD, token ring, token bus. PREREQUISITES: COMP 2150 and COMP 3410.

6601. Models of Computation. (3). Computer models as a basis of the understanding and analysis of programming, computation, and complexity: machine models (finite-state, stack, and Turing machines) linguistic models (grammars, lambda calculus, and predicate calculi); biologically-inspired models (e.g. neural nets or genetic algorithms); unsolvability, universality, decidability, and feasibility. PREREQUISITE: MATH 2701 or PHIL 3621, or permission of instructor.

6711. Introduction to Mathematical Logic. (3). Propositional logic and truth tables algorithms; first order calculus: terms, formulas, sentences, models, satisfaction, truth and logical validity; proof procedures and natural deduction, completeness and incompleteness theorems; applications to artificial intelligence, computer theorem proving, and verification of computer programs. PREREQUISITE: MATH 2701, 6701, or PHIL 3621 or permission of instructor.

6720. Introduction to Artificial Intelligence. (3). (Same as ELEC 6720.) Fundamentals of programming in LISP; central ideas of artificial intelligence, including heuristic search, problem solving, slot-and-filler structures and knowledge representation. PREREQUISITE: COMP 4040 or permission of instructor.

6730. Expert Systems. (3). (Same as ELEC 6730.) Fundamentals of programming in PROLOG, central ideas of expert system development, including knowledge representation, control structures, tools, knowledge acquisition, and knowledge engineering. PREREQUISITES: MATH 2701 and COMP 4030, or permission of instructor.

6901. Individual Studies in Computer Science. (1-3). Directed individual study of selected areas of computer science. Repeatable by permission to 6 semester hours. PREREQUISITE: Permission of instructor.

†COMP 6911. Internship in Computer Science. (1-6). Practical experience in computer science. Students are placed with governmental or private organizations. Project must be approved and supervised by department faculty. Academic credit granted on certification of cooperating agency and acceptance by the supervising faculty of written report. May be repeated for total of six semester hours credit. PREREQUISITE: permission of instructor.

6990-6999. Topics in Computer Science. (1-3). Topics are varied and announced in *Schedule of Classes*. PREREQUISITE: Permission of instructor.

7041-8041. Compiler Design. (3). Translation of computer source language including compiling of interpreters, scanning and code generation, for arithmetic and Boolean expressions, arrays, conditional and iterative statements using recursive and nonrecursive compiling techniques. Construction of automated compiler given a source language in form of a context-free grammar and a target in the form of actions to be performed when rules of grammar are satisfied. PREREQUISITE: COMP 6041.

7081-8081. Software Development Process Models. (3). Development processes; maturity models; process improvement, metrics (process and product), estimation, management, maintenance; quality assurance; personal and team software process models. PREREQUISITE: COMP 6081, or permission of instructor.

7083-8083. Software Development Methodologies. (3). Description methods for the support of process models; advanced object-oriented analysis and design methods; reuse, testing, adaptive software, software comprehension, understanding and environments. PREREQUISITE: COMP 6081, or permission of instructor.

7100. Introduction to Electronic Commerce. (3). Technical foundations of electronic commerce, including intranets and extranets and protocols, programming in C++, Java and HTML, client-server environments, webmasters, on-line authoring tools, catalogs, and services. PREREQUISITE: COMP 2150 or knowledge of a high-level programming language.

7105. Contemporary Electronic Commerce. (3). (Same as BA 7105.) Technical and managerial principles of EC, including electronic infrastructure, data transfer, data mining and warehousing, security; impact of EC on resource planning, project development, organization and management of the business environment; new forms of virtual enterprise. PREREQUISITES: COMP 7100 or ISDS 7190, or permission of instructor.

7110. Advanced Electronic Commerce. (3). (Same as BA 7110.) Advanced concepts and strategies for EC, including implementation platforms, multimedia integration, human-computer interaction, and ethical issues; impact of EC as a force in technology advances, consumer behavior, and changing the nature of the business world. PREREQUISITE: COMP 7105, or permission of instructor.

7115-8115. Database Systems. (3). Review of the relational model; query processing and optimization; physical database design and tuning; transaction processing; concurrency control; crash recovery;

database buffer management; database security. PREREQUISITE: COMP 6115, or permission of instructor.

7116-8116. Advanced Database Systems. (3). Advanced data modeling; object-oriented and object-relational databases; indexing of complex data; advanced transaction processing; on-line analytical processing and data warehousing; distributed database processing. PREREQUISITE: COMP 7115, or permission of instructor.

7117-8117. Topics in Database Management Systems. (3). Advanced current research topics in database and information management, with emphasis on nontraditional data and applications. PREREQUISITE: COMP 7116, or permission of instructor.

7118-8118. Topics in Data Mining. (3). Approaches to data mining and knowledge discovery (graphical, statistical, combinatorial, heuristic); classification and clustering; time series analysis; spatial data mining; data mining applications. PREREQUISITE: COMP 3160, or permission of instructor.

7120-8120. Cryptography and Data Security. (3). (Same as ISDS 7670-8670.) Ancient and modern cryptology and ciphers; security problems in computing; basic encryption and decryption; public-key cryptography, notions of security in computing environments; encryption, protocols; security for programs, OS's, data bases, PC's, networks and communication; legal, ethical and human factors in computer security. PREREQUISITE: permission of instructor; MATH 2701 recommended.

7270-8270. Operating Systems. (3). (COMP 7271.) Function, structure, and design parameters of computer operating systems. Time-sharing, multiprogramming, and multiprocessing considerations. Actual operating systems. Design methodology and evaluation techniques. PREREQUISITE: COMP 6270.

7272-8272. Parallel Programming. (3). Overview of parallel computer architectures, languages, and programming strategies; overview of parallel machines in operation and case studies of their programming, including massively parallel machines and programming projects. PREREQUISITES: Knowledge of FORTRAN, C, or LISP, and permission of instructor.

7274-8274. Distributed Computing. (3). Algorithms, data structures, programming languages, and strategies for problems using several processors in absence of single central controller; shared variables, message passing, concurrent languages, Petri nets, mutual exclusion, Byzantine agreement, clock synchronization, self-stabilizing systems, abort-commit protocols, network partitioning, leader election and common knowledge. PREREQUISITE: COMP 6270.

7282-8282. Evolutionary Computation. (3). Computational implementation of biological analogies, such as genetic algorithms, genetic programming, embryonics, evolutionary engineering; representation, fitness functions, fitness landscapes, automatically defined functions; applications to optimization, machine learning, software development. PREREQUISITE: COMP 6602, or permission of instructor.

7290-8290. Molecular Computing. (3). (Same as MMCS 7290-8290.) Basics of cell biology and genetics (DNA structure and enzymes, replication and translation); feasible DNA based solution of hard computational problems; issues in the design of molecular computers; foundations of nanotechnology. PREREQUISITE: COMP 4/6030, or permission of instructor.

7295-8295. Introduction to Bioinformatics. (3). Algorithms for problems arising in molecular biology, such as sequence matching, alignment, gene finding, sequence assembly, phylogeny, and structure prediction; internet resources; statistical analysis of DNA, RNA, and protein sequences. PREREQUISITE: COMP 6030, or permission of instructor.

7311. Data Communications II. (3). LANs; WANs; public networks; ISDN and BISDN; internetworking; routing algorithms, congestion control algorithms; queueing models; remote procedure calls; FTAM; telnet; rlogin; electronic mail; news; WWW; distributed applications. PREREQUISITE: COMP 6310.

7313-8313. Network Design and Performance Analysis. (3). Quantitative performance of communication networks (queueing network analysis, bottleneck analysis, service discrimination, monitoring, security); performance tuning; case studies of practical network design issues and solution techniques. PREREQUISITE: COMP 6310, or permission of instructor.

7327-8327. Topics in Network and Internet Security. (3). Concepts of network security; survey of security software packages; security in Java; intrusion-detection systems; current security issues on Internet and electronic commerce. PREREQUISITES: COMP 6310 and 7120, or permission of instructor.

7514-8514. Cognitive Science Seminar. (3). Systematic study of current topics in Cognitive Science; student required to make presentations and prepare research paper or project. May be repeated for a maximum of 9 hours credit. No more than 3 hours may be applied to M.S. with computer science concentration. PREREQUISITE: Permission of instructor.

7515-8515. Complex Systems. (3). Systematic study of information processing, broadly construed, natural or artificial, occurring in complex systemic interactions, such as those encountered in dynamical, neural, biological, social, evolutionary, and cyberspatial systems. PREREQUISITES: COMP 6601, or permission of instructor.

7517-8517. Topics in Human-Computer Interaction. (3). Facts, theories, and issues about human sensation, perception, and interaction for developing more ergonomic and human-like computer interfaces; interactive platforms in use or under development. PREREQUISITE: COMP 6002, or permission of instructor.

7601-8601. Topics in Discrete Modeling. (3). Application of computer models to problem solving in natural language processing, decision making, pattern recognition, image processing, and phenomena in physics, chemistry and biology. PREREQUISITE: COMP 6601 or permission of instructor.

7711-8711. Logic Programming. (3). Theoretical foundations of Prolog, including models of logic programs, answer substitutions, fixpoint semantics, soundness and completeness of SLD-resolution, search procedures, negation as failure, and parallel logic programming. PREREQUISITE: COMP 6711 or COMP 6730, or permission of instructor.

7713-8713. Advanced Algorithms. (3). Advanced methods and data structures in sequential algorithms, including amortized analysis, backtracking and branch-and-bound, heuristics, randomized algorithms, derandomization, approximation and approximability; basic parallel models and algorithms, including sorting and searching, numerical, symbolic, and probabilistic algorithms. PREREQUISITES: COMP 6002 and COMP 6030 or permission of instructor.

7715-8715. Computational Complexity. (3). Basic properties of RAM and Turing machine time and space complexity classes; reducibility and completeness, intractable problems and lower bounds, sample of NP-Complete problems, approximation algorithms for NP-hard problems; randomization and probabilistic complexity classes, oracles and relativization; interactive proofs, polynomial-time hierarchy; PSPACE-complete problems. PREREQUISITES: COMP 6601 or permission of instructor.

7717-8717. Topics in Algorithms. (3). Recent developments and practical issues in algorithms and data structures. Repeatable by permission. PREREQUISITE: COMP 7713, or permission of instructor.

7719-8719. Combinatorial Optimization. (3). Computational complexity: reductions, oracles and NP-completeness; five basic problems on convex sets in euclidean spaces; pivoting, ellipsoid, and basis reductions methods; optimization on graphs; matching and stable set polytopes; algorithms on perfect graphs. PREREQUISITES: COMP 7713 or COMP 7715, or permission of instructor.

7720-8720. Artificial Intelligence. (3). (Same as ELEC 7720-8720.) Central issues of artificial intelligence, including game playing, planning, machine learning, common-sense reasoning, perception and action; implementations in LISP. PREREQUISITE: COMP 6720.

7740-8740. Neural Networks. (3). (Same as ELEC 7740-8740.) Learning algorithms for multilayer perceptrons, least-mean squares, backpropagation and its variants, cascade-correlation, other supervised learning algorithms; unsupervised methods, including Hebbian, competitive and reinforcement learning; applications to associative memories, combinatorial optimization, component analysis, function approximation, pattern classification; theory of neurodynamics, including equilibrium, stability, and computational power.

7750-8750. Logical Foundations of Artificial Intelligence. (3). (Same as ELEC 7262-8262.) Logical foundations of artificial intelligence, predicate calculus, declarative knowledge, inference, resolution strat-

egies, nonmonotonic reasoning, induction, probabilistic logic, belief, state and change, and intelligent-agent architecture.

7760-8760. Control of Autonomous Agents. (3). Exploration and current applications of nontraditional control methods for design of autonomous agents, both in hardware and software, capable of operating in unusual and complex environments, such as subsumption architectures, adaptive fuzzy systems and software agents; novel learning and action selection paradigms. PREREQUISITE: COMP 6002, or permission of instructor.

7771-8771. Graph Algorithms. (3). Introduction to graphs, algorithms, and complexity; depth first search and breadth first search; algorithms for connectivity, biconnectivity, strong connectivity, minimum cost spanning trees, planarity testing, network flow, and matching; Eulerian and Hamiltonian cycle programs; coloring; approximation algorithms for TSP. PREREQUISITE: COMP 6030, or permission of instructor.

7820-8820. Pictorial Algorithms and Machine Vision (3). Image formation and sensing in vision systems; basic algorithms for processing continuous and discrete images; edge detection; shape detection vs. brightness, lightness, shading and color; reflectance maps; stereoscopic systems; pattern classification; representation problems; basic concepts and applications of computational geometry; passive navigation and motion planning. PREREQUISITE: COMP 7713 or permission of instructor.

7901-8901. Individual Studies in Computer Science. (1-4). Directed independent problem research and program design, writing and documentation in an area selected by student with approval of both adviser and supervising staff members. Repeatable by permission. PREREQUISITE: Permission of instructor.

†7950. Computer Science Seminar. (1). Formal meetings, presentations, and discussions of current topics of interest, including oral and written reports by students defending a master's thesis; participation by students, faculty, and visiting colleagues.

†7960-8960. Seminars in Teaching, Research, and Consulting. (3). Non-traditional setting in which master's students develop skills in areas of teaching, research, and consulting. Required of all graduate assistants in the department. May be repeated.

7970-8970. Electronic Commerce Project. (3). (Same as BA 7970-8970). Research for specific projects under the supervision of a faculty member and possibly a liaison from commerce or industry. PREREQUISITE: Permission of project advisor.

7980-8980. Research Seminar. (3). Research for specific projects under the supervision of a faculty member and possibly a liaison from commerce or industry. Each section of this class will be designated for a special area. PREREQUISITE: Permission of project advisor.

7990-99-8990-99. Advanced Topics in Computer Science. (1-3). Advanced topics and recent developments in computer science. Repeatable by permission. PREREQUISITE: Permission of instructor.

†7996. Thesis. (1-6).

†Grades of S, U, or IP will be given

MATHEMATICS (MATH)

6010-19. Special Topics in Mathematics and Statistics. (1-3). Topics are varied and announced in *Schedule of Classes*. PREREQUISITE: Permission of instructor.

6171. Special Problems in Mathematics. (1-3). Directed individual study in a selected area of mathematics chosen in consultation with the instructor. Repeatable by permission of the Chair of the Department. PREREQUISITE: Permission of the instructor.

6240. Matrix Algebra. (3). Elementary operations, special classes of matrices, determinants, eigenvalues and eigenvectors, canonical forms, and elementary computer implementation. PREREQUISITE: Knowledge of Fortran and MATH 1321 or 1312.

6242. Linear Algebra. (3). Linear transformations, polynomials, determinants, direct-sum decompositions, diagonalizable operators, rational and Jordan form, inner product spaces, spectral theorem. PREREQUISITE: MATH 3242.

6261. Abstract Algebra. (3). Rings; integral domains; fields, groups-divisibility theory; real and complex numbers; polynomials. PREREQUISITE: MATH 2321.

6350. Introduction to Real Analysis I. (3). The real number system, functions and sequences, limits, continuity, differentiation; Riemann-Stieltjes integration, series of functions. PREREQUISITE: MATH 2322.

6351. Introduction to Real Analysis II. (3). Integration theory; Riemann and Lebesgue integrals; partial differentiation; implicit function theorem. PREREQUISITE: MATH 6350 or permission of instructor.

6361. Complex Variables. (3). Complex numbers, point sets and mappings; analytic functions; integration. PREREQUISITE: MATH 2322.

6390. Ordinary Differential Equations. (3). Existence and uniqueness, linear and nonlinear systems, stability, classification of linear flows, boundary value problems, and numerical applications. PREREQUISITES: MATH 3391 and either 4240 or 3242.

6391. Partial Differential Equations I. (3). Laplace transforms; Fourier series; introduction to partial differential equations. PREREQUISITE: MATH 3391.

6392. Partial Differential Equations II. (3). Methods of characteristics; Greens functions; existence and regularity of solutions of boundary value and Cauchy problems. PREREQUISITE: MATH 6391.

6411. Topology. (3). Introductory set theory; metric spaces; topological spaces; mappings; Hausdorff spaces; connectedness and compactness. PREREQUISITE: MATH 4350.

6701. Mathematics for Computer Scientists. (4). Basic mathematical concepts applied to problem solving in computer science; (di)graphs, trees; enumeration; recurrence relations; induction, basic probability and distributions; integer and modular arithmetic; random number generators; state sets and transition functions, finite-state machines; boolean algebra, and elementary logic. PREREQUISITE: MATH 1211. COREQUISITE: MATH 1321.

6721. Numerical Analysis. (3). Derivation and application of computer-oriented numerical methods for functional approximation, differentiation, quadrature, and the solution of ordinary differential equations. PREREQUISITES: MATH 2321 and knowledge of some structured programming language.

6741. Linear Programming Methods. (3). Theory of linear programming methods; problem formulation; convex sets; simplex and revised simplex methods; matrix games and linear programming. PREREQUISITES: MATH 3242 and COMP 1900 or their equivalents.

7020-29-8020-29. Special Topics in Mathematics (3).

7235-8235. Combinatorics. (3). (MATH 7793). Principles and techniques of combinatorial mathematics with a view toward applications in computer science. Methods of enumeration, matching theory, paths and cycles, planarity, coloring problems, extremal problems. PREREQUISITE: Permission of instructor.

7236-8236. Applied Graph Theory. (3). Applications of directed and undirected graphs to problems in various disciplines: chemistry, computer science, electrical engineering, linguistics, operations research, social sciences. PREREQUISITE: MATH 6242 or permission of instructor.

7237-8237. Graph Theory. (3). Connectivity, Euler tours and Hamilton cycles, matchings, coloring problems, planarity and network flows; study of classical theorems due to Brooks, Menger, Kuratowski, Schur, Tutte, and Vizing. PREREQUISITE: MATH 6242 or permission of instructor.

7241. Linear Algebra. (3). Vector spaces; linear transformations and functionals; determinants; rational and Jordan forms; inner product spaces; bilinear forms; PREREQUISITE: MATH 6242.

7261. Algebraic Theory I. (3). Studies in group theory and ring theory, including Sylow theory and factorization theory. PREREQUISITE: MATH 6261.

7262. Algebraic Theory II. (3). A continuation of Math 7261. Studies in field theory and modules, including free algebras, Galois theory, tensor products. PREREQUISITE: MATH 7261.

7290-99-8290-99. Topics in Algebra. (3). Topics are varied and announced in *Schedule of Classes*. PREREQUISITE: Permission of instructor.

7311-8311. Topics in Analysis. (1-3). Repeatable by permission. PREREQUISITE: MATH 7350.

7321. Modeling and Computation. (3). Introduction to process of formulating, solving, and interpreting mathematical models of real phenomena; both formal analysis and numerical techniques for variety of models. PREREQUISITE: MATH 3391, 6721.

7350. Real Variables I. (3). σ -algebra, outer measure, Lebesgue measure, measurable functions, differentiation, absolute continuity, L_p -spaces. PREREQUISITE: MATH 6351.

7351. Real Variables II. (3). Metric spaces, Baire category theorem, Hahn Banach theorem, uniform boundedness principle, closed graph theorem, general measure, signed measures, Radon-Nikodym theorem, product measures, Fubini theorem. PREREQUISITE: MATH 7350.

7355-8355. Functional Analysis I. (3). Vector spaces, Banach spaces, Hilbert spaces; linear functionals and operators in such spaces; spectral theory. PREREQUISITE: MATH 7350.

7356-8356. Functional Analysis II. (3). A continuation of MATH 7355-8355. PREREQUISITE: MATH 7355-8355.

7361. Complex Analysis. (3). Analytic functions, power series, mapping properties, complex integration, Cauchy's theorem and its consequences, sequences of analytic functions. PREREQUISITE: MATH 6351.

7371. Calculus of Variations. (3). Introduction to calculus of variations, including applications to problems in science, engineering, and economics. PREREQUISITE: Permission of instructor.

7375. Methods of Mathematical Physics I. (3). (Same as PHYS 7375). Vector spaces, matrices, tensors, vector fields, function spaces, differential and integral operators, transform theory, partial differential equations. PREREQUISITE: MATH 3391, 4242 and 4350 or permission of instructor.

7376. Methods of Mathematical Physics II. (3). (Same as PHYS 7376). Complex variables, asymptotic expansions, special functions, calculus of variations, additional topics on matrices and operators, topics in non-linear analysis. PREREQUISITE: MATH 7375 or permission of the instructor.

7393-8393. Differential Equations and Applications. (3). The concepts of stability and periodic oscillation are examined for systems that arise in harmonic oscillation, population dynamics, circuit theory, mechanics, ecology, epidemics and other areas that depend on the interests of the class. PREREQUISITE: MATH 3391 or consent of instructor.

7395-8395. Theory of Differential Equations. (3). Linear and nonlinear systems, Poincaré-Bendixson theory, Liapunov's direct method, fundamental properties of solutions including existence and uniqueness, and applications. PREREQUISITE: MATH 6350 and 6242.

7411. Point Set Topology. (3). An axiomatic approach to compactness, separability, connectedness, metrizability and other topological properties. PREREQUISITE: MATH 6411.

7412-8412. Topics in Topology. (3). PREREQUISITE: MATH 7411.

7721. Advanced Numerical Analysis. (3). A continuation of Mathematics 6721; specialized methods and techniques in field of numerical analysis. PREREQUISITE: MATH 6721.

821-8821. Special Problems in Mathematics. (1-3). Directed individual study in a selected area of mathematics chosen in consultation with the instructor and the student's adviser. Repeatable by permission. PREREQUISITE: Permission of the instructor.

921-8921. Special Problems in Differential Equation. (1-3). Repeatable by permission. PREREQUISITE: MATH 7393.

922-8922. Special Problems in Applied Mathematics. (1-3). Repeatable by permission. PREREQUISITE: Permission of the instructor.

7960-8960. Seminars in Teaching, Research, and Consulting. (3). Non-traditional setting in which master's students develop skills in areas of teaching, research, and consulting. Required of all graduate assistants in the department. May be repeated.

995. Project In Applied Mathematics. (1-3). Mathematical modeling problem related to science or industry, selected in consultation with a faculty advisor, and leading to final report. Repeatable by permission. PREREQUISITE: MATH 7321.

†7996. Thesis. (3-6).

8811. Advanced Seminar in Mathematics. (1-3). PREREQUISITE: permission.

†9000. Dissertation. (1-9). Independent research for the Ph.D. degree.

MATHEMATICS COURSES FOR SECONDARY SCHOOL TEACHERS (MATH)

6151. History of Mathematics. (3). The development of mathematics from the earliest times to the present; problem studies; parallel reading and class reports. PREREQUISITE: 21 hours in MATH courses including MATH 2322 and MATH 2701.

7171. Workshop in Junior High Mathematics. (3). This course is designed to provide in-service training, with emphasis on new course content.

7174. Workshop in Senior High Mathematics. (3). This course is designed to provide in-service training, with emphasis on transformation geometry.

7281. Linear Algebra for Teachers. (3). Euclidean n -space; vector spaces; subspaces; linear independence and bases; linear transformations; matrices; systems of linear conditions; characteristic values and vectors of linear transformations. PREREQUISITE: MATH 7381.

7282. Abstract Algebra for Teachers. (3). A basic abstract algebra course designed especially for teachers. Topics will include: groups, rings, integral domains, fields; an axiomatic approach to the development of algebra; concepts of proof. PREREQUISITE: College Algebra.

7381. Introduction to Analysis I. (3). Properties of real number system; elementary functions; plane analytic geometry; nature of the derivative; techniques of differentiation; periodic functions; differentiation of trigonometric functions; applications of the derivative; concepts of integration. PREREQUISITE: MATH 1211 or MATH 1213.

7382. Introduction to Analysis II. (3). Continuation of MATH 7381; definite integral with applications; integration of elementary transcendental functions; techniques of integration; indeterminate forms and improper integrals; infinite sequences and infinite series with tests for convergence. PREREQUISITE: MATH 7381 or equivalent.

7681. Probability for Secondary Teachers. (3). Probability spaces, theory of statistical inference, physical interpretations of probability. PREREQUISITE: MATH 1211.

STATISTICS (MATH)

6607. Introduction to SAS Programming. (3). SAS program statement syntax and flow control; selecting and summarizing observations; combining, dividing and updating SAS dataset; input tailoring and output customization; SAS built-in functions; SAS Macro Language Programming; other SAS packages like SAS/GRAPH and SAS/IML. NOTE: Introductory statistical courses are recommended.

6611. Introduction to Applied Statistics. (3). Binomial, hypergeometric, Poisson, multinomial and normal distributions; test of hypotheses, chi-square test, t -tests, F -test, etc.; nonparametric tests; correlation analysis. NOTE: Students majoring in Mathematical Sciences may not apply credit for this course to their degree requirements. Students majoring in other areas such as Physics or Engineering and who have a calculus background should take MATH 6635. PREREQUISITE: 6 hours in Mathematics at level of MATH 1211 or above.

6614. Applied Probability and Queuing Theory. (3). Probability and random variables, discrete and continuous probability distributions, stochastic processes, queuing theory, applications of probability and queuing theory to computer systems. NOTE: Students may not receive credit for both MATH 6614 and MATH 6635. PREREQUISITES: MATH 2321, MATH 2701, and COMP 1900.

6631. Probability. (3). Basic concepts in probability; probability models; applications. NOTE: Students majoring in Mathematical Sciences may not take MATH 6631 for credit.

6635. Introduction to Probability Theory. (3). Basic probability theory, random variables, discrete and continuous probability distributions, functions of one or more random variables, multivariate distributions including multinomial and bivariate normal distributions. NOTE: Students may not receive credit for both MATH 6635 and MATH 6614. PREREQUISITE: MATH 2322.

6636. Introduction to Statistical Theory. (3). Functions of two random variables; gamma, beta, multinomial, and bivariate normal distributions; Bayes estimators; maximum likelihood and method of moments estimators; sufficient statistics, unbiasedness, confidence intervals, and hypothesis testing. PREREQUISITE: MATH 6635.

6637. Statistical Methods. (3). Basic concepts of hypothesis testing; comparisons of two population means, proportions, and variances; analysis of variance; completely randomized designs, randomized block designs, Latin square designs; multiple comparisons; simple linear model and multiple regression; analysis of covariance. PREREQUISITE: MATH 6611 or 6635.

6640. Introduction to Probability Models. (3). Basic concepts of discrete Markov chains; branching processes; Poisson processes; applications to modeling of the population growth; application to modeling of the spread of infectious disease. PREREQUISITE: MATH 6635.

7613. Probability Theory. (3). Probability measures; distribution functions; independence; mathematical expectation, modes of convergence. Borel-Cantelli Lemma, Weak and Strong Laws of Large Numbers; Glivenko-Cantelli Lemma. Characteristic Functions Inversion Theorems; Slutsky's Theorem. Central Limit Theorem: Liapounov and Lindberg-Levy and Lindberg-Feller Theorems; Multivariate Extensions. Berry-Esseen Theorem. PREREQUISITES: MATH 6350. Knowledge of MATH 6613 recommended.

7641. Analysis of Variance. (3). Basic concepts of ANOVA, partitioning of the sums of squares, fixed effects models, t- and F-tests, multiple comparison procedures, random effect models, variance component models, analysis of covariance and introduction to MANOVA (SAS or comparable statistical packages used extensively to analyze different types of designs). PREREQUISITE: MATH 7643 or MATH 6636.

7642-8642. Experimental Design. (3). Fundamental concepts in designing experiments, justification of linear models, randomization, principle of blocking, use of concomitant observations, principle of confounding, fractional replication, composite designs, incomplete block designs. PREREQUISITE: MATH 7641 or 7643.

7643. Least Squares and Regression Analysis. (3). Basic concepts of hypothesis testing and confidence intervals; simple and multiple regression analyses, model selection, Mallows' Cp, examination of residuals, Box-Cox transformation, influence diagnostics, multicollinearity, Ridge-regression, probit, logit, and log-linear analyses; intensive use of SAS or other statistical packages. PREREQUISITE: MATH 6635.

7645. Sampling Techniques. (3). Planning, execution, and analysis of sampling from the finite populations; simple, stratified, multistage cluster and systematic sampling; ratio and regression estimates, estimation of variance. PREREQUISITE: MATH 6635; COREQUISITE: MATH 6636.

7647. Nonparametric Statistical Methods. (3). Use of distribution-free statistics for estimation, hypothesis testing, and correlation measures in designing and analyzing experiments. PREREQUISITE: MATH 6635; COREQUISITE: MATH 6636.

7651. Linear Models. (3). Multivariate normal distributions, distribution of quadratic forms, general linear hypothesis of full rank, optimal point and interval estimations, applications to regression models; elements of generalized linear models, applications to logistic regression and log-linear models; use of SAS procedures. PREREQUISITE: MATH 7643.

7654. Inference Theory. (3). Bayes and maximum likelihood estimators, sufficient statistics; Rao-Blackwell Theorem, sampling distributions; unbiasedness, completeness and UMVU estimators; efficient estimators, Cramer-Rao inequality; simple Robust estimators; UMP-tests; likelihood ratio tests, t-tests and F-tests. PREREQUISITE: MATH 6636.

7656-8656. Advanced Techniques in Statistical Inference. (3). Limit theorems; uniformly minimum variance unbiased and maximum likelihood estimators; information inequalities; large sample theory; Robust estimators; uniformly most powerful unbiased and invariant tests; sequential and Robust tests. PREREQUISITE: MATH 7654.

7657-8657. Multivariate Statistical Methods. (3). Basic contents: Multivariate normal distributions; Wishart distribution, Hotelling-T₂, Matric-t and Beta distributions; generalized regression models and growth curve models; multivariate analysis of variance; principal component analysis; discriminant analysis; factor analysis; curve fitting procedures in multivariate cases. All topics will be illustrated by

practical examples. PREREQUISITE: MATH 6636 or permission of the instructor.

7660-8660. Applied Time Series Analysis. (3). Basic concepts and examples of stationary and nonstationary time series. Random harmonic analysis. Spectral density functions, model building procedures for time series models. Model identification. Diagnostic checking, smooth, forecasting and control. Box-Jenkin approach of time series analysis. Some seasonal models. PREREQUISITE: MATH 6636.

7670-8670. Applied Stochastic Models. (3). Markov chains with discrete time. Classification of states, stationary distributions, absorption probabilities and absorption time. Markov chains with continuous time. Birth-death processes. Waiting time distributions. Queuing models. Population growth models. Kolmogorov forward and backward equations. Diffusion processes. Fokker-Planck equation. Applications to genetic problems, etc. PREREQUISITES: MATH 6636 and 6640.

7671-8671. Individual Studies in Statistics. (1-3). Directed individual study of recent developments in statistics. Repeatable by permission. PREREQUISITE: Permission of the instructor.

7672-8672. Special Problems in Statistics. (1-3). (6671). Recent developments in statistical methods and applications. PREREQUISITE: Permission of the instructor.

7680-8680. Bayesian Inference. (3). Nature of Bayesian inference. The formulation and choice of prior distributions. Advantages and disadvantages of Bayesian approach. The applications of Bayesian approach to Behren-Fisher problems, to regression analysis and to the analysis of random effect models. The applications of Bayesian approach to the assessment of statistical assumptions. Bayesian prediction procedures. PREREQUISITE: MATH 6636.

7685-8685. Statistical Simulation and Computing. (3). Uniform random number generation and testing, generation of non-uniform random variables, approximating tail probabilities and percentage points in common distributions, computational methods for multiple regression analysis. PREREQUISITE: MATH 6636 and knowledge of FORTRAN.

7691-8691. Seminar in Statistical Research. (1-3). Recent developments in statistical methods and their applications. Basic topics cover "multivariate method," growth curve models, robustness and effects of departure from basic statistical assumptions on common inference procedures, multivariate contingency tables, bioassay, etc. PREREQUISITE: MATH 6636.

7692-8692. Statistical Consulting. (3). Methods and techniques of statistical consulting; students will participate in consulting practice supervised by graduate faculty in statistics. May be repeated for a total of 6 credit hours. PREREQUISITES: MATH 6611 and MATH 6637.

7695-8695. Bootstrap and Other Resampling Methods. (3). Empirical distribution and plug-in principle; bias reduction; bootstrapping regression models; the jackknife; balanced repeated replication; bootstrap confidence intervals; parametric bootstrap; permutation tests. PREREQUISITE: MATH 7645 and MATH 7647.

7759-8759. Categorical Data Analysis. (3). Exponential family of distributions and generalized linear models; binary variables and logistic regression; contingency tables and log-linear models; quasi-likelihood functions; estimating functions. PREREQUISITES: MATH 7643 and MATH 7654.

7761-8761. Theory of Nonparametric Statistics. (3). Order statistics distribution free statistics, statistics utilizing counting and ranking one-sample and two-sample U-statistics, asymptotically distribution free statistics, asymptotic relative efficiency of tests, confidence intervals, linear rank statistics, one-sample location problem, two-sample location and scale problems. PREREQUISITE: MATH 7654.

7762-8762. Survival Analysis. (3). Nonparametric estimation and comparison of survival functions: Kaplan-Meier Estimator and other estimators of hazard functions; parametric survival models; Gehan test, Mantel-Haenszel test and their extensions; Cox proportional hazard model; conditional likelihood, partial likelihood analysis; identification of prognostic and risk factors; Applications to life testing and analysis of survival data using statistical packages such as SAS. PREREQUISITES: MATH 7643 and MATH 7654.

7763-8763. Analysis of Quantal Response Data. (3). Maximum likelihood procedure for fitting simple models: method of scoring, iterated weighted regression, E-M algorithms, generalized linear models

multivariate bioassays, extended models for quantal assay data; over-dispersed binomial and Poisson models; quasi-likelihood and generalized estimating equations; robust and nonparametric methods; use of statistical packages such as SAS. PREREQUISITES: MATH 7643 and MATH 7654.

7764-8764. Statistical Methods for Biomedical and Environmental Research. (3). Penalized likelihood method, spline and nonparametric regression, use of E-M algorithm, Fourier transform method, Error-in-variables, longitudinal models and repeated measures; generalized estimating equations; analysis and modeling of AIDS data; statistical risks assessment. PREREQUISITES: MATH 7643 and MATH 7654.

7765-8765. Advanced Stochastic Models in Biomedical Sciences. (3). Stochastic models of the AIDS epidemic; chain multinomial models, Markov models, Non-Markov marker processes, diffusion processes for AIDS, Stochastic models of carcinogenesis; two-stage, multi-event and multiple path models. PREREQUISITES: MATH 7654 and MATH 7-8670.

†Grades of S, U, or IP will be given

Microbiology and Molecular Cell Sciences

HENRY A. KURTZ, Ph.D., *Interim Chair,*
Room 201, Life Sciences Building

BARBARA J. TALLER, Ph.D.,
Coordinator of Graduate Studies (901) 678-2955

E-mail: bjtaller@cc.memphis.edu
www.people.memphis.edu/~microcell/mmcs.html

MEMBERS

MARY E. ANDERSON, *Assistant Professor*
Ph.D. (1983), Cornell University Graduate School of Medical Sciences [2003]

R. HOWARD BERG, *Associate Professor*
Ph.D. (1977), The University of Florida [2001]

KING-THOM CHUNG, *Professor*
Ph.D. (1972), The University of California-Davis [2001]

LEWIS B. COONS, *Professor*
Ph.D. (1970), North Carolina State University [2000]

THEODORE KENT GARTNER, *Professor*
Ph.D. (1965), The University of California [2000]

CHARLES A. LESSMAN, *Professor*
Ph.D. (1980), The University of Minnesota [2001]

DONALD D. OURTH, *Professor*
Ph.D. (1969), The University of Iowa [2000]

S. EDWARD STEVENS, JR., *Professor*
Ph.D. (1971), The University of Texas-Austin [2001]

TIT-YEE WONG, *Professor*
Ph.D. (1981), The University of Houston [1999]

ASSOCIATE MEMBERS

KEITH E. MURPHY, *Associate Professor*
Ph.D. (1989), Louisiana State University [2001]

BARBARA J. TALLER, *Associate Professor*
Ph.D. (1978), The University of Wisconsin-Madison [2002]

ADJUNCT MEMBERS

JOSEPH J. BARRETT
D.V.M. (1983), The University of Tennessee-Knoxville [2000]

OSCAR COLAMONICI
M.D. (1983), The University of Uruguay [2000]

A. U. DANIELS
Ph.D. (1966), The University of Utah [1999]

JAMES W. DAVENPORT
Ph.D. (1983), Cornell University [1999]

DAN GOLDOWITZ
Ph.D. (1978), The University of California-Irvine [2000]

D. BETTY LEW
M.D. (1980), Temple University [2002]

THOMAS F. O'BRIEN, JR.

M.D. (1986), The University of Tennessee-Memphis [2001]

DAVID L. SMALLEY
Ph.D. (1981), Memphis State University [1999]

RICHARD A. SMITH
Ph.D. (1997), The University of Memphis [2001]

FRANKIE STENTZ
Ph.D. (1976), The University of Tennessee-Knoxville [1999]

- I. The Department of Microbiology and Molecular Cell Sciences offers graduate programs leading to the Master of Science or Doctor of Philosophy degree with a major in Biology. Concentrations are offered in Microbiology and in Molecular Cell Sciences.

Program requirements described in the Graduate School Issue of the 1999-2001 *Bulletin of The University of Memphis* are subject to change. Please consult the department office or the Office of the Graduate School for changes that may occur before publication of the next issue of this Bulletin.

II. M.S. Degree Program

A. Program Admission

1. Scores for both the GRE General Test and the Subject Test in biochemistry, cell and molecular biology are required. Minimum GRE scores required for admission are 400 verbal and 450 quantitative. Subject test subscores will be used to help plan the student's academic program by identifying areas that need strengthening.
2. Two letters of recommendation.
3. A minimum score of 550 on the TOEFL, or 210 on the computer-based TOEFL, (for students whose native language is not English).
4. An undergraduate degree with a minimum GPA of 2.5 on a 4.0 scale. Undergraduate coursework in organic chemistry, physics, and calculus is strongly recommended.

B. Program Requirements (Thesis)

1. A minimum of 30 semester hours beyond the baccalaureate degree.
2. MMCS 7004, 7200, and 7996. Seminar attendance is mandatory.
3. Maintenance of a GPA of 3.0. Continuation of a student who earns a grade of "2.0" or below in a course is at the discretion of the student's Advisory Committee.
4. Passing grade on a written examination covering subject matter designated by the student's Advisory Committee.
5. Public presentation and defense of the student's thesis as approved by the student's Advisory Committee.

C. Program Requirements (Non-thesis)

1. A minimum of 36 semester hours of graduate courses. The total number of semester hours required for graduation is determined by the student's Advisory Committee. No more than 3 semester hours can be satisfied by BIOL or MMCS 7092.
2. MMCS 7004 and 7200. Seminar attendance is mandatory.
3. Maintenance of a GPA of 3.0. Continuation of a student who earns a grade of "2.0" or below in a course is at the discretion of the student's Advisory Committee.
4. Passing grade on a written and/or oral final examination administered by the student's Advisory Committee during the final semester of residence.

III. Ph.D. Degree Program

A. Program Admission

1. The prospective doctoral student must have an undergraduate degree, preferably in the life or physical sciences, from a recognized institution. Undergraduate coursework in organic chemistry, physics, and calculus is strongly recommended.
2. Scores for both the GRE General Test and the Subject Test in biochemistry, cell and molecular biology are required with the application to enter the Graduate School. Minimum GRE scores required for admission are 450 verbal and 550 quantitative. Subject test subscores will be used to help plan the student's academic program by identifying areas that need strengthening.
3. A minimum score of 550 on the TOEFL, or 210 on the computer-based TOEFL, (for students whose native language is not English).
4. Two letters of recommendation.

B. Program Requirements

1. Course Requirements—MMCS 8004, 8200, and 9000. Attendance at seminar is mandatory. A minimum of 3 academic years (72 semester hours) beyond the baccalaureate degree is required. A minimum of 30 semester hours (including 18 semester hours of MMCS 9000 Research and Dissertation) must be taken in residence.
2. Qualifying Examination—Results of the GRE Subject Test in biochemistry, cell and molecular biology will serve as the qualifying exam and will be used to help plan the student's academic program.
3. Grade Point Average—Maintenance of a GPA of 3.0 is required. Continuation of a student who earns a grade of "2.0" or below in a course is at the discretion of the student's Advisory Committee.
4. Foreign Language and Research—Students are required to demonstrate competence in foreign language or research tool areas, or both. This requirement will be determined by each student's Advisory Committee.

5. **Comprehensive Examination and Candidacy**—After two years of coursework, the graduate student may take the written and oral comprehensive examination in his or her major area. Admission to candidacy will be recommended to the Graduate School by the student's committee upon satisfactory completion of any language requirement, course work, comprehensive examination, and acceptance of the dissertation project.
6. **Dissertation and Research**—A dissertation will be required of candidates for the doctoral degree. A minimum of eighteen (18) hours of research and dissertation credit must be completed during the graduate program. The dissertation must show a mastery of the techniques of scientific research, and it must be a distinct and new contribution to the body of scientific knowledge. The student's committee must approve the topic and the final dissertation.
7. **Final Examination**—The final examination will be conducted by the chair of the student's committee. The committee will consist, insofar as possible, of the same persons involved in the comprehensive examination. The final examination will be an oral defense of the dissertation and will be announced and open to the public. Upon successful completion of the examination and all degree requirements, the committee will recommend awarding the Ph.D.

MICROBIOLOGY AND MOLECULAR CELL SCIENCES (MMCS)

6090-99. Special Topics in Microbiology and Molecular Cell Sciences. (1-3). Topics are varied and announced in Schedule of Classes. May be repeated with different topics for a maximum of four hours. PREREQUISITE: Consent of instructor.

6150. Developmental Biology. (3). (BIOL 6150, 6151). Introduction to study of developing biological systems at cellular and molecular level. *Three lecture hours per week.* PREREQUISITES: BIOL 3072 and CHEM 3312.

6350. Microbial Biotechnology. (3). Principles underlying practical applications of microorganisms, including synthesis of commercial products, vaccines and antibodies, bioremediation and biomass utilization, plant biotechnology, and food production. *Three lecture hours per week.* PREREQUISITES: MMCS 3550 and CHEM 3312.

6375. Molecular Biology of Parasites and Their Vectors. (3). Emphasis on molecular and immunological aspects of parasites of humans, companion animals, and livestock. The biology, treatment, and prevention of parasitic diseases will be discussed. *Three lecture hours per week.* PREREQUISITE: MMCS 3130 or 3550.

6400. Plant Cell and Molecular Biology. (3). The cellular and molecular basis of plant development, including plant hormones, signal transduction, regulation by light, plant-microbe interactions, and plant transformation. *Three lecture hours per week.* PREREQUISITES: MMCS 3130 and BIOL 3072.

6440. Pathogenic Bacteriology. (3). (BIOL 6440). Survey of pathogenic bacteria, human and veterinary diseases they cause, and methods of diagnosis; molecular basis of pathogenesis. Introduction to immunological principles and immunity. *Three lecture hours per week.* PREREQUISITES: MMCS 3550 and organic chemistry.

6445. Immunology. (3). (BIOL 6445, 6444). Antigens, immunoglobulin classes, cells and cytokines of immune response, complement system, hypersensitivities, blood groups, vaccines, and immunity. *Three lecture hours per week.* PREREQUISITES: MMCS 3550 and CHEM 3311.

6450. Microbial Ecology. (3). (BIOL 6450). Roles of microorganisms in the environment. Microbial processes, interactions with the environment and biota, population ecology, community ecology, and biodegradation. *Three lecture hours per week.* PREREQUISITES: MMCS 3550, 6512, or consent of instructor.

6460. Advanced General Microbiology Laboratory. (2). Application of modern laboratory techniques and instrumentation to experiments in microbial physiology, genetics, ecology, and biotechnology. *Four laboratory hours per week.* PREREQUISITES: MMCS 3550 and 3600.

6465. Advanced Medical Microbiology Laboratory. (2). Application of modern laboratory techniques and instrumentation to experiments in pathogenic bacteriology, immunology, virology, and parasitology. *Four laboratory hours per week.* PREREQUISITES: MMCS 3550 and 3600.

6470. Molecular Genetics. (4). (BIOL 6470). Structure, function, and replication of DNA, recombination, colinearity of DNA with genetic map, mutagenesis, plasmids, genetic code, protein synthesis, suppression, regulation of gene expression, genetic engineering, and

immunogenetics. For students without formal training in molecular genetics. *Four lecture hours per week.* PREREQUISITES: BIOL 3072 and MMCS 3130 or 3500.

6501. Virology. (3). Introductory study of viruses of human and veterinary significance, and methods of cultivation, isolation, and characterization; study of pathogenic mechanisms. *Three lecture hours per week.* PREREQUISITE: MMCS 3550.

6503. Biochemistry Laboratory I. (2). (BIOL 6503). (Same as CHEM 6501). Survey of common biochemical techniques and the properties of biological molecules. Emphasis on purification and assay of enzymes and on enzyme kinetics. *Six laboratory hours per week.* PREREQUISITES: CHEM 3301, and CHEM 3302 or 3201. PREREQUISITE OR COREQUISITE: MMCS 6511 or CHEM 6511.

6504. Biochemistry Laboratory II. (2). (BIOL 6504). (Same as CHEM 6502). Biochemical laboratory techniques; emphasis on nucleic acids and recombinant DNA techniques. *Six laboratory hours per week.* PREREQUISITES: MMCS 6511 or CHEM 6511 and MMCS 4325 or MMCS 6470, or consent of instructor.

6511. Biochemistry I. (3). (BIOL 6511). (Same as CHEM 6511). Chemistry of amino acids and proteins related to their properties in biochemical systems. Enzymology, including kinetics and conformation studies. Coenzymes and their functions. Importance of pH; bioenergetics. Chemistry of carbohydrates, lipids, and nucleotides. *Three lecture hours per week.* PREREQUISITE: CHEM 3312.

6512. Biochemistry II. (3). (BIOL 6512). (Same as CHEM 6512). Metabolism of carbohydrates, amino acids, and nucleotides, with emphasis on mammalian systems. Biochemistry of RNA and DNA, including their relationship to biosynthesis of proteins, DNA and RNA. *Three lecture hours per week.* PREREQUISITE: MMCS 6511 or CHEM 6511.

6580-99. Special Topics in Biochemistry. (1-3). (Same as CHEM 6580-99).

†7003-8003. Seminar in College Teaching. (3). Strategies and skills for effective college teaching; includes use of innovative approaches and computer-based instructional technology. May be repeated up to 12 credit hours. Only 3 credit hours may be applied to degree requirements.

†7004-8004. College Biology Teaching. (1). Under faculty supervision, graduate students participate in teaching laboratory sections of existing undergraduate courses in the biological sciences (MMCS or BIOL). Student's performance evaluated by faculty member in charge and appropriate grade assigned. Only one credit hour applicable to degree requirements. *Two-four laboratory hours per week.*

†7006-8006. Care and Humane Use of Laboratory Animals. (2). (Same as BIOL 7006-8006). Care and use of live vertebrate animals in research and teaching. Students must enroll in this course before working with live vertebrate animals; fulfills requirements of Federal Animal Welfare Act and NIH Guide. *One lecture and two laboratory hours per week.* PREREQUISITE: Permission of instructor.

7031-8031. Cellular Physiology. (4). (BIOL 7031-8031). Cell function cellular thermodynamics, exchange of materials across cell membranes, physiological buffering systems, enzyme kinetics, cellular respiration, and cellular response to extracellular perturbation. *Two lecture, four laboratory hours per week.* PREREQUISITE: Permission of instructor.

7040-8040. Light Microscopy and Image Processing. (3). Light microscope optics, theory and practice of confocal microscopy, current techniques in fluorescence microscopy, digital image acquisition and processing. Lectures occasionally supplemented with demonstrations. *Three lecture hours per week.*

7051-8051. Vertebrate Cell Culture Techniques. (4). (BIOL 7051-8051). Theory, principles, and practical preparation in the use of vertebrate cell cultures and cell lines in biomedical research. *Two lecture, four laboratory hours per week.* PREREQUISITE: Permission of instructor.

†7092-8092. Research. (1-6). Consultation, reading, and laboratory work investigating selected topics in microbiology and molecular cell sciences. Formal paper with review of literature and results of investigation required. May be repeated for maximum of six semester hours credit.

7131-8131. Cell and Molecular Biology. (4). Introduction to principles of molecular biology as they apply to eukaryotic cells, including transcription, translation, regulation of protein function, DNA replication, membrane biogenesis, secretion, hormone action, signal transduction, and ligand receptor interaction. *Four lecture hours per week.*

†7200-8200. Seminar. (1). (Open to BIOL and MMCS majors only.) Student presentations of topics in microbiology, biochemistry or cell and molecular biology.

7290-8290. Molecular Computing. (3). (Same as COMP 7290-8290). Basics of cell biology and genetics (DNA structure and enzymes, replication, and translation); feasible DNA-based solution of hard computational problems; issues in the design of molecular computers; foundations of nanotechnology. **PREREQUISITE:** COMP 6030 or permission of instructor.

7331-8331. Photosynthesis. (2). (BIOL 7331-8331). Lectures and readings on modern theory of photosynthesis. Includes such topics as chloroplast structure and function; chemistry and photochemistry of chlorophyll; influence of external factors on rate of photosynthesis, absorption, fluorescence, and luminescence; energy storage; efficiency; carbon fixation; photosynthesis in cell extracts; phosphorylation. *Two lecture hours per week.*

7400-8400. Comparative Immunology. (3). Phylogenesis and development of the defensive immune systems of invertebrates and the vertebrate classes. *Three lecture hours per week.* **PREREQUISITE:** MMCS 6445.

7464-8464. Advanced Immunology. (4). Selected topics and laboratories in molecular and cellular immunology, immunobiology, tumor immunology and medical aspects of immunology. *Three lecture, two laboratory hours per week.* **PREREQUISITES:** MMCS 6445 and 6511 or their equivalent.

7470-8470. Advanced Bacterial Genetics. (3). Advanced studies in the molecular basis of bacterial genetics. Topics include mutation and bacterial repair systems, complementation analysis, recombination, gene transfer mechanisms, gene conversion and marker effects, insertional elements, phase variation, and bacteriophage genetics. *Three lecture hours per week.* **PREREQUISITE:** MMCS 6470 or equivalent.

7500-09-8500-09. Special Topics in Biochemistry. (1-3). (Same as CHEM 7500-09-8500-09). Lectures and conferences covering selected areas of current interest (including enzymology, protein and nucleic acid chemistry, physical chemistry of biochemical macromolecules, lipid, carbohydrate and amino acid metabolism, biochemical energetics, and metabolic regulation). May be repeated for a maximum of 12 hours. **PREREQUISITE:** Permission of instructor.

7530-8530. Bacterial Physiology. (4). (BIOL 7530-8530). Bacterial physiology including growth, nutrition, biosynthesis, biodegradation, and adaptation. *Three lecture, two laboratory hours per week.*

7550-8550. Food and Industrial Toxicology. (3). Principles and methodology of genotoxicity; assessment of toxic substances in animal and plant foodstuffs, and in industrial wastes; fungal and bacterial contaminants, food additives, and food processing. Biotransformation and health impacts are emphasized. *Three lecture hours per week.*

7700-20-8700-20. Special Topics in Microbiology and Molecular Cell Sciences. (1-4). Current topics of special interest. Topics are announced in *Schedule of Classes*. **PREREQUISITE:** Permission of instructor.

†7996. Thesis. (1-6).

†9000. Doctoral Research and Dissertation. (1-10). The dissertation must be an independent research project applying a mastery of the techniques of scientific research. It must be a distinct and new contribution to the body of scientific knowledge. Minimum total of 18 hours is required.

†Grades of S, U, or IP will be given.

Philosophy

NANCY SIMCO, Ph.D., *Chair*
Room 327, Clement Hall

MARK TIMMONS, Ph.D.,
Coordinator of Graduate Admissions

DAVID HENDERSON, Ph.D.,
Coordinator of Graduate Studies
(901) 678-2535

E-mail: tmccall@memphis.edu
WWW: www.people.memphis.edu/~philos/phil.html

MEMBERS

- ROBERT L. BERNASCONI, *Professor*
Ph.D. (1982), Sussex University [2001]
TINA CHANTER, *Associate Professor*
Ph.D. (1987), SUNY, Stony Brook [2000]
DAVID HENDERSON, *Associate Professor*
Ph.D. (1985), Washington University [2004]
TERENCE E. HORGAN, *Professor*
Ph.D. (1974), University of Michigan [2000]
LEONARD LAWLOR, *Associate Professor*
Ph.D. (1988), SUNY, Stony Brook [1999]
THOMAS NENON, *Professor*
Ph.D. (1983), University of Freiburg, Germany [1999]
HOKE ROBINSON, *Professor*
Ph.D. (1978), SUNY, Stony Brook [2000]
JOHN TIENSON, *Professor*
Ph.D. (1970), University of Illinois [1999]
MARK TIMMONS, *Professor*
Ph.D. (1982), University of Nebraska [2001]

ASSOCIATE MEMBERS

- SARA BEARDSWORTH, *Assistant Professor*
Ph.D. (1993), Warwick University [2004]
JOHN ELLIS, *Associate Professor*
Ph.D. (1991), King's College [2004]
GENE G. JAMES, *Professor*
Ph.D. (1969), University of North Carolina at Chapel Hill [2000]
TIMOTHY D. ROCHE, *Associate Professor*
Ph.D. (1984), University of California, Davis [1999]
JACQUELINE SCOTT, *Assistant Professor*
Ph.D. (1995), Stanford University [2001]

ADJUNCT MEMBER

- RODOLPHE GASCHÉ
Ph.D. (1976) Freie Universität Berlin [2001]
JILL ROBINS, *Associate Professor*
Ph.D. (1995) State University of New York at Buffalo [2001]

I. The Department of Philosophy offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees with a major in Philosophy. The master's program is designed to provide comprehensive training in philosophy for students seeking work beyond the bachelor's level, whether for self-enrichment, background for other areas, or in preparation for doctoral work. The Ph.D. program provides students with the broad background necessary for effective teaching as well as the specialized research skills required for a career in philosophy at the college or university level.

II. M.A. Degree Program

A. Program Admission

Students desiring admission to the graduate program in philosophy should correspond with the coordinator of graduate admissions in Philosophy as early as possible in the admission procedure, and as far in advance as they can before the semester in which they plan to enter. The Philosophy Department admits students for the fall semester of each academic year. Prospective applicants should write directly to the Department of Philosophy to request information and application forms. Application deadline (for all materials to be received) is February 1 for the M.A. program.

B. Program Prerequisites

1. A bachelor's degree from a recognized college or university. Official transcripts should be sent to the Office of Graduate School Student Services.

2. A minimum of a 2.5 quality point average on a scale of 4.0. Students with less than a 2.5 quality point average may, on occasion, be granted probationary admission.
3. An acceptable score on the general aptitude portion of the Graduate Record Examination.
4. At least 18 semester hours in undergraduate philosophy courses including the following courses or their equivalent: introduction to philosophy, ethics, elementary logic, intermediate logic, history of ancient philosophy and history of modern philosophy. Students who lack one or more of these courses may be admitted to the program only on the condition that they take the appropriate course as soon as possible.
5. Three letters of recommendation from people qualified to judge the student's ability to undertake graduate work. Form letters for this purpose should be obtained from and returned to the Coordinator of Graduate Admissions in Philosophy.
6. A 10-20 page writing sample and a 1-page statement of purpose should be submitted to the Coordinator of Graduate Admissions in Philosophy.

C. Program Requirements

1. Thirty to thirty-three hours of class work, 23 of which must be at the 7000 level or above. Students who write a thesis are required to take 30 hours, 3 of which are credit for the thesis. Students who do not write a thesis are required to take 33 hours. Students with approved collateral areas may take up to six hours outside the department if they are writing a thesis or nine hours if they are not.
2. A written comprehensive examination covering the major areas and history of philosophy.

III. Ph.D. Degree Program

A. Program Admission

The Philosophy Department admits students for the fall semester of each academic year. Prospective applicants should write the Department of Philosophy to request information and application forms. Application deadline (for all materials to be received) is February 1 for the Ph.D. program.

1. Fulfillment of university requirements for admission to the Graduate School, including a score on the GRE acceptable to the department.
2. The equivalent of the B.A. degree, usually with a major in philosophy. This must include at least the following courses or their equivalents: Intermediate Logic, Survey of Ancient Philosophy, Survey of Modern Philosophy, and Ethics. Students lacking one or more of these courses may be admitted to the program provisionally, on the condition that they make up the missing course work as soon as possible (graduate credit will not be granted for make-up work).
3. Three letters of recommendation, to be submitted by persons competent to judge the prospective student's ability to undertake graduate work. (These letters are to be sent directly from the referee to the department's coordinator of graduate admissions).
4. Transcripts of prior academic work. Official copies should be sent to the Office of Graduate School Student Services. A minimum GPA of 3.00 (on a scale of 4.00) will be expected.
5. A 10-20 page writing sample and a 1-page statement of purpose should be submitted to the Coordinator of Graduate Admissions in Philosophy.

B. Retention Requirements

A student will be retained continuously in the program until completion of the degree providing the following conditions are met:

1. All students will be required to maintain a GPA of at least 3.5. Should the student's GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair and the coordinator of graduate studies, this period may be extended one additional semester.
2. Students will be expected to demonstrate satisfactory progress in fulfilling the graduation requirements outlined below.

C. Graduation Requirements

1. General Requirements
 - a. Each student must earn at least 72 credit hours above the bachelor's degree.
 - b. At least 60 credit hours must be earned at the 7000 level or higher.
2. Residency Requirements

At least 24 credit hours must be earned while the student is in continuous residence in the program.
3. Distribution Requirements
 - a. Core Requirements

Students must take a core of twelve hours in major figures in the history of philosophy (at least three in ancient and three in modern); six hours in theoretical philosophy; and six hours in practical philosophy, three of which must be in ethics.
 - b. Additional Requirements

Students must take the proseminar, normally during the first semester of graduate work (those who have not had an advanced logic course will be expected to take one); at least one course must be a systematic study of a major figure. At least two courses must be in the analytic tradition, and two in the continental tradition; these will normally be courses in the twenty-four hour core.
4. Examination Requirements
 - a. Qualifying Examinations

Qualifying examinations are taken in August of the student's second year. They consist of two four-hour written examinations, one in the history of ancient philosophy and one in the history of modern philosophy. A general reading list is provided for each area. Only students who pass the qualifying examination may continue work for the Ph.D.

Note: It is expected that the doctoral qualifying examination will be coordinated with the master's comprehensive examination, so that those whose scores fail to qualify them for advanced doctoral study but are sufficient for the master's degree may then complete the requirements for a terminal master's degree.

b. Area Examinations

Area examinations are taken in August of the student's third year. They consist of two four-hour written examinations, one in metaphysics/epistemology and one in ethics/social-political philosophy. A general reading list is provided for each area. Only students who pass the area examinations may continue work for the Ph.D.

5. Language Requirements

Students must demonstrate sufficient ability to translate philosophical texts by sitting for a two-hour translation examination in two of the following languages: French, German, Classical Greek, Latin. Other languages may be substituted if they are shown to be relevant to the student's course of study.

6. Dissertation Requirements

a. Dissertation Committee. The student must select a dissertation director. The coordinator of graduate studies in consultation with the graduate faculty will select three additional readers.

b. Dissertation Proposal Defense. The student will submit a proposal for the dissertation to the committee and defend the proposal before the graduate faculty. This defense will normally occur before the end of the sixth semester.

c. Dissertation Defense. The dissertation committee will schedule a defense of the completed dissertation in coordination with the chair and the coordinator of graduate studies. Notice will be given; copies of the dissertation made available, and a public oral defense of the dissertation will be held. Upon approval of the dissertation committee and faculty, the dissertation will be submitted to the Graduate School and the degree awarded.

PHILOSOPHY (PHIL)

6211. Studies in Ancient Philosophy. (3). Readings from primary sources, supplemented by commentary from antiquity and modern scholarship, including Pre-Socratics, Plato, Aristotle, and the Hellenistic period. May be repeated for maximum of 9 hours credit with permission of graduate coordinator.

6311. Studies in Modern Philosophy. (3). Readings from major philosophers of 17th to early 19th centuries, supplemented by commentaries from modern and contemporary sources. May be repeated for maximum of 9 hours credit with permission of graduate coordinator.

6421. Philosophy of Mind. (3). Survey of major issues and positions in recent philosophy of mind. Behaviorism; reductive, non-reductive and eliminative versions of materialism; functionalism; mental causation; phenomenal consciousness; psychoanalysis and the unconscious; computational and connectionist models of mind.

6422. Recent Anglo-American Philosophy. (3). An examination of major developments in philosophy in England and the United States from 1900 to present with reading from such philosophers as Russell, Moore, Ayer, Wittgenstein, James, Dewey, Lewis, Quine, and other contemporary authors.

6441. Recent Continental Philosophy. (3). Major figures in 20th century European thought; movements such as phenomenology, existentialism, structuralism, critical theory, and hermeneutics. May be repeated for maximum of 9 hours credit with permission of graduate coordinator.

6551. Social and Political Philosophy. (3). Theories of society, cultural institutions, government, law, power, authority, rights, and obligation.

6632. Advanced Logic. (3). The nature of axiomatic systems, ar foundations of mathematics.

6662. Philosophy of the Social Sciences (3). Scientific character peculiar to social (rather than natural) sciences by virtue of their special subject-matter: humans and society; meaning, understanding vs. explanation, rationality and the nature of social institutions.

6711. Philosophy of Religion. (3). Philosophical issues raised in religious experience including classical and contemporary arguments for and against existence of God; meaningfulness of religious language; and concepts of faith, evil, and immortality.

6801-20. Special Topics in Philosophy. (3). Topics in areas of epistemology, metaphysics, philosophy of language, philosophy of mind, logical theory, axiology. Area to be covered will be in the *Schedule of Classes*. May be repeated for a maximum of 15 hours credit.

†7001-8001. Proseminar. (3).

Topics vary in all of the following courses. They are announced in the Schedule of Classes and described in the departmental course outline booklet. These courses may be repeated for credit if not to improve a previous grade.

7020-8020. Seminar in Major Figures. (3).

7030-8030. Seminar in Continental Philosophy. (3).

7040-8040. Seminar in Normative Philosophy. (3).

7051. Seminar in Systematic Philosophy. (3).

7201-8201. Seminar in Classical Philosophy. (3).

7203-8203. Seminar in Contemporary Philosophy. (3).

7241-8241. Seminar on Plato. (3).

7252-8252. Seminar on Aristotle. (3).

7301-8301. Seminar in Modern Philosophy. (3-6).

7332-8332. Seminar in the Philosophy of Religion. (3).

7361-8361. Seminar on Descartes. (3).

7372-8372. Seminar on Kant. (3).

7414-8414. Seminar in Metaphysics. (3).

7421-8421. Seminar in Epistemology. (3).

7442-8442. Seminar on Heidegger. (3).

7451-8451. Seminar on Wittgenstein. (3).

7541-8541. Seminar in Social and Political Philosophy. (3).

7551-8551. Seminar in Ethical Theory. (3).

7642-8642. Seminar in Philosophy of Logic. (3).

7671-8671. Philosophy of Science. (3).

7761-8761. Seminar in Philosophy of Art. (3).

7800-7810-8800-8810. Special Topics in Philosophy. (3).

†7994. Reading and Research. (1-9).

†7996. Thesis. (1-9).

8051. Colloquium on Philosophical Problems. (3).

8061. Current Research Topics. (1-6).

†8071. Research in Progress Seminar. (1-12).

†8994. Advanced Reading and Research. (1-12).

†9000. Dissertation. (1-12).

†Grades of S, U, or IP will be given

Physics

M. SHAH JAHAN, Ph.D., *Chair*
Room 216 Manning Hall

MILAN C. BUNCICK, Ph.D.
Coordinator of Graduate Studies
(901)-678-3119

e-mail: mbuncick@cc.memphis.edu
www.people.memphis.edu/~physics

MEMBERS

B. N. NARAHARI ACHAR, *Professor*
Ph.D. (1968), Pennsylvania State University [2000]

DONALD R. FRANCESCHETTI, *Professor*
Ph.D. (1974), Princeton University [2002]

M. SHAH JAHAN, *Professor*
Ph.D. (1977), The University of Alabama [2005]

DAVID L. PRICE, *Associate Professor*
Ph.D. (1986), University of Minnesota [2002]

JOAN SCHMELZ
Ph.D. (1987), Pennsylvania State University [1999]

ASSOCIATE MEMBERS

MILAN BUNCICK, *Associate Professor*
Ph.D. (1987), University of Tennessee [2002]

MICHAEL McKEE GARLAND, *Professor*
Ph.D. (1965), Clemson University [2000]

JOHN W. HANNEKEN, *Associate Professor*
Ph.D. (1979), Rice University [2002]

ROBERT RIGGS MARCHINI, *Professor*
Ph.D. (1969), Clemson University [2000]

ADJUNCT MEMBERS

HAI H. TRIEU
Ph.D. (1995), Case Western Reserve University [2000]

GERRIT VERSCHUUR
Ph.D. (1965), University of Manchester, England [2000]

ANN M. VIANO
Ph.D. (1996), Washington University [1999]

YUNPONG ZHU
Ph.D. (1987), Rice University [1999]

I. The Department of Physics offers a major in Physics for the Master of Science degree.

II. M.S. Degree Program

A. Program Admission Requirements

1. For admission to the graduate program, a Bachelor's degree in Physics or a closely related area is required, no minimum undergraduate GPA is specified. Students are also required to present, as a prerequisite, 20 semester hours of undergraduate physics courses including upper division Mechanics, Electricity and Magnetism, and approved Mathematics courses in Calculus and Differential Equations.
2. The GRE is recommended. The minimum acceptable score for admission is a total of 1000 (verbal 400 plus quantitative 600). The GRE Advanced is not required.
3. Students from non-English speaking countries are required to demonstrate proficiency in English via the TOEFL examination. The minimum acceptable score is 550 (or 210 on the computer-based TOEFL).
4. Other examinations which are suggested for admission are the Miller Analogies Test, which may be substituted for the GRE. A minimum score of 36 is desirable.

B. Program Requirements

1. After meeting the general degree requirements for admission to The Graduate School, students selecting Physics as a major will be assigned to the Graduate Committee, which must approve and direct their course of study.
2. Students may elect either a thesis or non-thesis program.
3. If a *thesis program* is selected the following minimum requirements must be satisfied.
 - a. 18 semester hours of physics courses numbered 7000 or above, including PHYS 7100, 7200, 7300, 7375, 7376, and 7520.
 - b. Sufficient additional courses including 3-6 semester hours in PHYS 7996, Thesis, to satisfy a minimum of 30 semester hours (9 semester hours may be in a collateral field of study).
 - c. Satisfactory completion of a comprehensive written examination.
 - d. Complete a research project, submit a written thesis describing the research, orally present and defend the thesis before a faculty committee.
4. If a *non-thesis program* is selected the following minimum requirements must be satisfied.
 - a. 21 semester hours of physics courses numbered 7000 or above, including PHYS 7100, 7200, 7300, 7375, 7376, and 7520.
 - b. Sufficient additional courses to satisfy a minimum of 33 semester hours in which 9 may be in a collateral field of study.
 - c. Complete a survey of an area of current research in fundamental or applied physics and make an oral and written presentation based on this survey before a faculty committee. The subject of this survey must be approved by the departmental graduate committee at least one semester prior to graduation.
 - d. Satisfactory completion of a comprehensive examination.

PHYSICS (PHYS)

6000-09. Special Topics in Physics. (3). Selected topics of current interest in physics. Topics are varied and announced in *Schedule of Classes*.

6051. Astrophysics. (3). Application of radiation laws to the interpretation of stellar structure. Introduction to radiative transfer in atmospheres. The spectral and luminosity classification of stars, stellar populations and evolution. *Three lecture hours and occasional observation periods per week.*

6110. Nuclear Physics. (3). Properties of atomic nuclei, radioactive transitions, alpha, beta and gamma decay. Binding energy, nuclear forces and nuclear models.

6211. Optics. (3). Geometrical and physical optics including such topics as thin lenses, spherical mirrors, lens aberrations, optical instruments, waves interference, diffraction, absorption, transmission, and scatterings. *Three lecture, three laboratory hours per week.* PREREQUISITE: PHYS 3212 or equivalent.

6410. Introduction to Quantum Theory. (3). Experimental basis of quantum theory; development of the Schrodinger equation and its solution for simple systems; selected applications in atomic and molecular structure. *Three lecture hours per week.*

6510. Thermodynamics. (3). A mathematical treatment of thermodynamics, including such topics as work, energy, enthalpy, entropy, reversible and irreversible processes, equilibria, specific heats and phase transitions. RECOMMENDED PREREQUISITE: PHYS 3112 or 3212.

6610. Solid State Physics. (3). Consideration of such topics as lattice vibrations, specific heats, electrical and thermal conduction in solids, magnetism. *Three lecture hours per week.*

7010. Fundamental Concepts of Classical Physics for Teachers. (3). Basic concepts of Newtonian mechanics, heat and sound. Emphasis on increasing understanding in classical physics, providing demonstrations of physical principles suitable for classroom use and designing and performing laboratory experiments. Credit does not apply toward a major or minor in chemistry or physics.

7011. Physics Practicum I. (1). Practicum or laboratory experiments, laboratory techniques, laboratory management and supervised experience in presenting demonstrations with emphasis on concepts covered in Physics 7010. *Two laboratory hours per week* COREQUISITE: PHYS 7010.

7020. Fundamental Concepts of Contemporary Physics for Teachers. (3). Basic concepts of electricity and magnetism, optics, atomic and nuclear physics. Laboratory experience. Credit does not apply toward a major or minor in chemistry or physics.

7021. Physics Practicum II. (1). Continuation of Physics 7011 with emphasis on concepts covered in Physics 7020. *Two laboratory hours per week.* COREQUISITE: PHYS 7020.

7030. Fundamental Concepts of Modern Physics for Teachers. (3). Basic concepts of modern physics, special relativity, solid state physics, particle physics, and space technology. Background in physics recommended. Credit does not apply toward a major or minor in chemistry or physics.

7031. Physics Practicum III. (1). Continuation of Physics 7021 with emphasis on concepts covered in Physics 7030. *Two laboratory hours per week.* COREQUISITE: PHYS 7030.

7050-59. Special Topics in Advanced Physics. (3-6). Selected topics in advanced physics. Topics are varied and announced in *Schedule of Classes*.

7060. Individual Study in Advanced Physics. (1-3). Independent investigation of an area of advanced physics under supervision of a Physics faculty member. Written report required. PREREQUISITE: permission of chair. Course may be repeated for a maximum of six hours credit.

7070. Fundamental Concepts in Astronomy for Teachers. (3). Observational astronomy, the solar system, stars and stellar evolution, galaxies and cosmology. Occasional night observations may be held. Credit does not apply toward a major or minor in physics or chemistry.

†7080. Teaching Skills for Graduate Assistants. (3). Overview of teaching techniques and classroom management for physics laboratory instructors; includes practical demonstrations in laboratory physics. Repeatable. PREREQUISITE: Limited to physics majors and permission of graduate coordinator.

†7090. Workshop in Professional Development for Graduate Students. (3). Presentations by physics faculty and students on current research topic; oral presentation required based on research performed under the supervision of a faculty member. Repeatable. PREREQUISITE: Limited to physics majors and permission of graduate coordinator.

7100. Classical Mechanics. (3). An analytical study of mechanics of particles and rigid bodies by Lagrange's, Hamilton's and Hamilton-Jacobi methods. The special theory of relativity, canonical transformation, and Poisson brackets are among the concepts emphasized.

7200. Quantum Mechanics I. (3). Physical principles and mathematical formalism of quantum theory, with emphasis on applications in atomic, molecular and solid state physics, scattering theory and absorption and emission of electromagnetic radiation. PREREQUISITE: PHYS 6410 or equivalent.

7201. Quantum Mechanics II. (3). Continuation of PHYS 7200; scattering theory, quantum dynamics, spin, perturbation methods and Hartree-Fock. PREREQUISITE: PHYS 7200.

7210. Relativistic Quantum Mechanics. (3). Quantum mechanics of relativistic particles including the Dirac equation, relativistic covariance, solutions for free particles, particles in electromagnetic fields, particles in central fields, methods of approximation and massless particles. *Three lecture hours per week.* PREREQUISITE: PHYS 7200 or permission of instructor.

7220. Relativistic Quantum Fields. (3). General formalism of fields, the Klein-Gordon field, second quantization of the Dirac field, quantization of electromagnetic fields, interacting fields, scattering matrix, perturbation theory, dispersion relations and renormalization. PREREQUISITE: PHYS 7210 or permission of instructor.

7230. Elementary Particles. (3). Introduction to elementary particles, elementary particle dynamics, relativistic kinematics, symmetries, bound states, Feynman calculus, quantum electrodynamics, electrodynamics of quarks and hadrons, quantum chromodynamics, weak interactions and gauge theories. PREREQUISITE: PHYS 7200 or permission of instructor.

7300. Electrodynamics. (3). An advanced course in electricity and magnetism. Topics include fields and potentials, energy methods, steady currents and magnetic materials, Maxwell's equations and electromagnetic waves.

7375. Methods of Mathematical Physics I. (3). (Same as MATH 7375) Finite dimensional vector spaces, matrices, tensors, vector fields, function spaces, differential and integral operators, transform theory, partial differential equations. PREREQUISITE: Background in ordinary differential equations and linear algebra.

7376. Methods of Mathematical Physics II. (3). (Same as MATH 7376) Continuation of PHYS 7375. Complex variable theory, asymptotic expansions, special functions, calculus of variations, additional topics on matrices and operators, topics in non-linear analysis. PREREQUISITE: PHYS 7375.

7520. Statistical Mechanics. (3). Elements of kinetic theory and applications to gases, specific heats, magnetism, etc. Partition function, introduction to Boltzmann statistics and quantum statistics. *Three lecture hours per week*

7600. Advanced Solid State Physics. (3). Quantum mechanical treatment of electronic and vibrational states of metals, semiconductors and insulators, transport phenomena, superconductivity, physics of defects in solids. PREREQUISITE: PHYS 7200 or permission of instructor.

7710. Advanced Topics in Optical Spectroscopy. (3). Advanced topics in atomic and molecular spectroscopy, including the interaction of optical radiation with matter, the transition probabilities, hyperfine structure, applications of group theory to spectroscopic problems.

†7995. Seminar. (1-3). Selected topics in physics research including areas of medical physics. Students required to give oral presentation based on library or original research.

†7996. Thesis. (1-6). Original investigation of an assigned problem in the area of graduate study to be carried out under the supervision of a qualified member of the staff. This investigation will furnish the material for a thesis. Scientific articles, progress reports, and special problems of interest are reviewed and discussed by the student in seminars each semester. A maximum of six semester hours credit allowed toward a master's degree.

†Grades of S, U, or IP will be given

Political Science

PAUL R. HAGNER, Ph.D., *Chair*
Room 437, Clement Hall

PAUL R. HAGNER Ph.D.,
Academic Coordinator (M.A.)

DOROTHY NORRIS-TIRRELL, Ph.D.
Academic Coordinator (M.P.A.)

JAMES R. CARRUTH
Administrative Coordinator (M.A. and M.P.A.)
(901) 678-3360
e-mail: jrcarrth@memphis.edu

RANDALL A. NEWMAN
Administrative Coordinator (M.H.A.)
(901) 678-2794
e-mail: rnewman@memphis.edu

E-mail: polsci@memphis.edu
www.people.memphis.edu/~polisci/hpage.html

MEMBERS

- JOY A. CLAY, *Associate Professor*
Ph.D. (1991), Virginia Tech [2001]
DAVID N. COX, *Professor*
Ph.D. (1977), Indiana University [2000]
GREER GAY, *Associate Professor*
Ph.D. (1987), University of South Carolina [2001]
KENNETH HOLLAND, *Professor*
Ph.D. (1978), University of Chicago [2003]
DOUGLAS R. IMIG, *Assistant Professor*
Ph.D. (1991), Duke University [2004]
WILLIAM R. MARTY, *Professor*
Ph.D. (1968), Duke University [2000]
THOMAS DAVID MASON, *Professor*
Ph.D. (1982), University of Georgia [2004]
DOROTHY NORRIS-TIRRELL, *Assistant Professor*
Ph.D. (1992), Florida International University [2003]

ASSOCIATE MEMBERS

- ROBERT G. BLANTON, III, *Assistant Professor*
Ph.D. (1996), University of South Carolina [2003]
PAUL R. HAGNER, *Professor*
Ph.D. (1981), Indiana University [2001]

I. The Department of Political Science offers individually-tailored programs leading to the Master of Arts in Political Science, the Master of Public Administration, and the Master of Health Administration. The Master of Arts degree in Political Science provides a broad foundation in politics and government for those intending further graduate study or careers in education and public service. Both thesis and non-thesis programs are available. Also, the study of Political Science may be combined with study in related areas.

The Master of Public Administration degree program educates students for careers in government and for employment with nonprofit and publicly-oriented organizations. The program combines interdisciplinary academic preparation with governmental and nonprofit internship experience.

The Master of Health Administration degree program is designed to provide an education for students preparing for careers in the broad range of health care agencies and services. The program combines interdisciplinary academic preparation with a field experience.

The Center for Health Services Research is the research arm of the Master of Health Administration degree and the Health Services Administration concentration of the Master of Public Administration degree. Research interests of faculty associated with the Center are broadly based with special attention given to the relationships between law, health administration, medical practice, and policy in contemporary society.

The Institute of Governmental Studies and Research provides unique research opportunities and field experience for students in both programs;

academic credit can be obtained for internship programs with national, state and local governments, as well as for research and study abroad.

Assistantships are available for qualified students in all programs. Applications are available in Clement Hall, Room 437.

All graduate students will consult with their adviser in the Department of Political Science as to the program of study they expect to follow.

II. The Department of Political Science offers a graduate program leading to the Masters of Arts with a major in Political Science, a graduate program leading to the Master of Public Administration degree, and a graduate program leading to the Master of Health Administration degree. Special fields of study included in the Master of Arts in Political Science are: American Politics (National, State, and Urban) and Public Law; Political Theory; Political Behavior and Analysis; Comparative Politics and International Relations; and Public Administration and Policy. For the Master of Public Administration program, the following concentrations are provided: General Public Administration; Urban Management and Planning; Health Services Administration; Human Resources Administration; and Nonprofit Administration.

III. M.A. Degree Program

A. Program Admission

Admission to the program will be based on selections from a pool of applicants who meet the University's Graduate School minimum undergraduate GPA and aptitude scores on the Graduate Record Examination (GRE). Miller Analogies Test (MAT) scores are not accepted for admission consideration.

Significant weight is given to the following factors in determining admissions to the M.A. program.

1. An undergraduate grade point average of 3.0 on a 4.0 scale from an accredited college or university.
2. GRE scores of 500 verbal and 500 quantitative.
3. Letters of recommendation from two persons (one academic) familiar with the applicant's academic background or experience, specifying in detail the applicant's capabilities for graduate study.
4. A statement of approximately 500-700 words indicating the applicant's present interests and career goals, including why the applicant wants the M.A. degree.

B. Program Requirements

1. Students who write a thesis must complete 33 hours of graduate courses including 3-6 hours of credit for POLS 7996, Thesis. Students who do not write a thesis must complete 36 hours of graduate courses.
2. Satisfactory completion of POLS 7100, Seminar in Scope and Methods of Political Science Research and 7401, Seminar in Political Theory.
3. At least 24 semester hours of the courses must be taken at the 7000 level, twelve of which must be in Political Science (27 hours non-thesis option).
4. Satisfactory performance on a Comprehensive Examination or satisfactory oral defense of a thesis.
5. A minimum of three courses each from two of the fields of Political Science listed above. A student may substitute six hours in a collateral field in a related area for one of the political science fields. Students must fulfill requirements in Methodology and Behavior as a third field of study.
6. At the discretion of the Academic Coordinator, six to nine hours in graduate work outside political science may be applied to the Master of Arts in Political Science.
7. No more than 6 semester hours of internship courses may be counted toward the 33 or 36 semester hour requirement.

IV. Master of Public Administration (M.P.A.) Degree Program

A. Program Admission

Admission to the program will be based on selections from a pool of applicants who meet the University's Graduate School minimum undergraduate G.P.A. and aptitude examination scores. All applicants, except those holding a professional doctoral degree (e.g.: M.D., J.D., D.D.S.) or Ph.D. from a U.S. accredited school, must submit scores for the verbal and quantitative components of the Graduate Record Examination (GRE) or the Graduate Management Aptitude Test (GMAT). Individuals holding professional doctoral or Ph.D. degrees should contact the M.P.A. academic coordinator regarding the requirements for submission of a standardized test score or evidence of completion of the doctoral or professional degree. Miller Analogies Test (MAT) scores are not accepted for admission consideration.

Significant weight is given to the following factors in determining admissions to the M.P.A. program.

1. An undergraduate grade point average of 3.0 on a four-point scale from an accredited college or university.
2. GRE scores of 500 verbal and 500 quantitative, or GMAT of 500.
3. Letters of recommendation from two persons (one academic) familiar with the applicant's academic background or experience in public administration, specifying in detail the applicant's capabilities for graduate study and for future performance as a public administrator.
4. A statement of approximately 500-750 words indicating the applicant's present interests and career goals, including why the applicant wants the M.P.A. degree.

B. Program Prerequisites

- Those entering the program must satisfy the appropriate prerequisite requirements before entering the program or by the end of the first semester. They must earn grades of "3.00" or better in the following courses. The prerequisite requirements are:
 - POLS 6101 (Political Statistics), or its equivalent; and
 - POLS 3601 (Introduction to Public Administration), or its equivalent; or at least 6 semester hours of courses in American Government or Public Administration; or demonstrate satisfactory performance on an admissions examination in introductory public administration administered by the M.P.A. Admissions Committee.
- All students entering the program who do not understand microprocessors and accessing the mainframe computer, or who do not have word processing, data base systems, or spreadsheet microcomputer skills, must acquire these skills through such means as short courses and training offered by Information Systems.

C. Program Requirements

- A total of at least 42 semester hours in graduate courses including the following core of required courses. A grade of "3.00" or better must be earned in each course:
 - POLS 7600 Administrative Theory
 - POLS 7601 Research Methods in Public Administration
 - POLS 7602 Public Budgeting and Finance Administration
 - POLS 7605 Human Resources Administration or approved alternate
 - POLS 7606 Administrative Law
 - POLS 7607 Public Management Leadership
 - POLS 7608 Public Management Information Systems
 - POLS 7609 Administrative Ethics
 - POLS 7213 Seminar in Public Policy
 - POLS 7610 Internship in Public Administration
- Each student will write an in-depth capstone paper while enrolled in POLS 7607, Public Management Leadership. A student must have completed a minimum of 30 hours in the program prior to enrolling in that course.
- Completion of course work in one of the following concentration areas: General Public Administration; Urban Management and Planning; Health Services Administration; Human Resources Administration; and Nonprofit Administration. Depending upon the concentration area and the nature of undergraduate preparation, the student may take up to twelve semester hours in one or two related areas outside the Department of Political Science, with the approval of the academic coordinator.
- A student must complete a minimum of 21 semester hours prior to enrollment in POLS 7610. Candidates for the M.P.A. degree who have had substantial administrative experience by the completion of all course work in the program may request a waiver of POLS 7610, Internship in Public Administration (3 hours). The request to waive must be submitted in writing to the academic coordinator and describe the student's administrative experience including responsibilities for supervision and budgets. If a waiver is granted, the student will substitute one 3-hour course for the internship. Students who have administrative experience may choose the option of an internship.
- Thirty semester hours must be taken in 7000 level courses.
- Satisfactory completion of a comprehensive examination.

D. Non-Degree Seeking Students

If a student has taken graduate courses at The University of Memphis as a non-degree-seeking student, the student may apply a maximum of 9 credit hours toward his/her degree requirements. The grade in each course applied must be at least a "3.00". The appropriate academic coordinator must approve all course work taken as a non-degree-seeking student.

V. Master of Health Administration (M.H.A.) Degree Program**A. Program Admission**

Admission to the program will be based on selections from a pool of applicants who meet the University's Graduate School minimum undergraduate G.P.A. and aptitude examination scores. All applicants, except those holding a professional doctoral degree (e.g.: M.D., J.D., D.D.S.) or Ph.D. from a U.S. accredited school, must submit scores for the verbal and quantitative components of the Graduate Record Examination (GRE) or the Graduate Management Aptitude Test (GMAT). Individuals holding professional doctoral or Ph.D. degrees should contact the appropriate academic coordinator regarding the requirements for submission of a standardized test score or evidence of completion of the doctoral or professional degree. Miller Analogies Test (MAT) scores are not accepted for admission consideration.

Significant weight is given to the following factors in determining admissions to the M.H.A. program.

- An undergraduate grade point average of at least 3.0 on a four-point scale from an accredited college or university.
- GRE verbal general test score at the minimum of the 40th percentile (based on current General Test Interpretive Data Score Report) and quantitative general test score at the minimum of the 30th percentile (based on current General Test Interpretive Data Score Report) or GMAT Admissions Examination with a minimum of the 40th percentile on the Verbal General Test and a minimum score of at least the 35th percentile on the Quantitative General Test.
- Letters of recommendation from two persons (one academic) familiar with the applicant's academic background or experience in health

services, specifying in detail the applicant's capabilities for graduate study and for future performance as a health services administrator.

- A statement of approximately 500-750 words indicating the applicant's present interests and career goals, including why the applicant wants the M.H.A. degree.

B. Program Prerequisites

- Those entering the program must satisfy the appropriate prerequisite requirements before entering the program or by the end of the first semester. They must earn grades of "3.00" or better in the following courses. The prerequisites are:
 - POLS 6101 Political Statistics (3) or graduate equivalent.
 - ACCT 7000 Financial Accounting (3) or graduate equivalent.
- Students without a clinical background are required to complete a course in epidemiology, HPRO 7712, Epidemiology, or equivalent.
- All students entering the program who do not understand microprocessors and accessing the mainframe computer, or who do not have word processing, database systems, or spreadsheet microcomputer skills, must acquire these skills through such means as short courses and training offered by Information Systems.

C. Program Requirements

- Complete a total of at least 48 semester hours in graduate courses.
- Complete the following core curriculum (42 hours). A grade of "3.00" or better must be earned in each course:
 - ECON 7710 Health Care Economics
 - HADM 7109 Health Administration Information Systems
 - FIR 7070 Financial Management
 - POLS 7213 Seminar in Public Policy
 - POLS 7605 Human Resources Administration or approved alternate
 - HADM 7106 Health Services Research
 - HADM 7101 Health Systems
 - HADM 7103 Health Planning
 - HADM 7107 Health Ethics
 - HADM 7102 Law of Health Administration
 - HADM 7104 Health Care Administration
 - HADM 7105 Government Regulation of Health Services
 - HADM 7190 Internship in Health Administration
 - HADM 7110 Health Management Leadership
- Complete a minimum of 36 hours at the 7000 level.
- Complete guided electives (6 hours) in consultation with the adviser.
- Students will write an in-depth capstone paper while enrolled in HADM 7110, Health Management Leadership. A student must have completed a minimum of 39 hours in the program prior to enrolling in that course.
- A student must complete a minimum of 21 semester hours prior to enrollment in HADM 7190, Internship. Candidates for the M.H.A. degree who have substantial administrative experience may request a waiver of HADM 7190, Internship in Health Administration (3 hours). The request for this waiver must be submitted in writing to the Graduate Coordinator and describe the student's administrative experience including responsibilities for supervision and budgets. If a waiver is granted, the student will substitute one 3 hour course for the internship. Students who have administrative experience may choose the option of the internship. Students without a health services background, may, at the discretion of the M.H.A. Coordinator, be required to take 7191, Internship in Health Administration (6 hours).
- Satisfactory performance on a comprehensive examination.

D. Non-Degree Seeking Students

If a student has taken graduate courses at The University of Memphis as a non-degree-seeking student, the student may apply a maximum of 9 credit hours toward his/her degree requirements. The grade in each course applied must be at least a "3.00". The appropriate academic coordinator must approve all course work taken as a non-degree-seeking student.

POLITICAL SCIENCE (POLS)

6101. Political Statistics. (3). Introduction to analysis of quantitative data used to test, statistically, hypotheses in fields of political science and public and health administration.

6200. Environmental Law, Policy, and Regulation. (3). Survey of the principal federal laws, policies and regulations concerning environmental use and protection.

6207. Health Politics and Policy. (3). Introduction to political, economic, and social forces affecting the health care system in the United States. Emphasizes development and comparison of health policies within the context of American politics; analysis of health policies within the context of the stages of American public policy-making.

6208. Mental Health Policy and Law. (3). Mental Health systems including voluntary and involuntary hospitalization, incompetency and guardianship, and mental health issues in criminal process; legal and policy concerns for mental health professionals, including regulation, malpractice, informed consent, and record confidentiality.

6209. Aging Policy and Law. (3). Social control and social justice considerations in such policy areas as protective services, Social Security, Medicare and Medicaid, long-term care, age discrimination, and death with dignity.

6210. Constitutional Principles in Loss of Liberty. (2). Constitutional law principles associated with loss of liberty for such populations as the homeless, vagrants, criminals, alcoholics, addicts, mentally ill, and children.

6211. Constitutional Law—National Powers. (3). An analysis of the relationships and controls of the three branches and the nature of the division of power between the nation and the states, with emphasis on the role of the Supreme Court as the arbiter in the constitutional system.

6212. Constitutional Law: Origins and Evolution of Civil Liberties in U.S. (3). Background, role and legitimate extent of civil rights and liberties in U.S.

6216. Interest Groups in American Politics. (3). Role and impact of interest groups within the American political system, including group theory, tactics, and relationships with various governmental institutions.

6217. The Legislative Process. (3). Origins, organization, functions, and activities for the U.S. Congress.

6219. The American Presidency. (3). Examination of the contemporary American presidency, including: Constitutional roots for the growth of presidential power; the roles of persuasion, reputation, and prestige in shaping foreign and domestic policy; presidential elections; and conflicts between the executive, legislative, and judicial branches.

6220. The Judicial Process. (3). Judicial selection, civil and criminal trial procedure, organization of state and federal courts, U.S. Supreme Court decision making process and issues surrounding judicial review.

6221. Urban Administration. (3). Examination of politics, administration, and public policy in an urban context; focus on the administrative aspects of selected governmental policy-making processes; interrelationships of governments at various levels, urban challenges facing modern public administration.

6222. Urban Politics. (3). Roles and processes of politics and governance in urban America in context of global, social, and economic influences on cities and suburbs.

6224. Urban Problems. (3). A study of selected problems in urban administration, politics, and policies.

†6230. Legislative Internship. (3-12). Supervised internship working with the Tennessee General Assembly or other legislative bodies on current legislative programs. Seminar sessions are held to discuss and analyze the problems with which the interns are working. May be repeated for a total of 12 credits. **PREREQUISITE:** Permission of department.

6305. Post-Soviet Governments and Politics. (3). Analysis of institutions, issues, processes, and domestic policies of states comprising the former Soviet territory, with special emphasis on Russia and Ukraine.

6312. Government and Politics of Japan. (3). Analysis of the political culture, government institutions, political processes and developmental changes in contemporary Japan.

6307. Government and Politics of Communist China. (3). A study of the institutions of government, the political process, political elites, political groups and political socialization of Communist China.

5401. Modern Political Ideologies. (3). A study of major ideologies of democracy, communism, and fascism as well as capitalism, socialism, racism, and nationalism, and ideologies of the developing or "third" and "fourth world" nations.

5405. Origin and Development of American Political Thought. (3). Origin and development of political thought in the United States from the colonial to the present time, with emphasis placed on the relation between political thought and political institutions and practices.

5501. Contemporary Problems in International Relations. (3). Studies or problems in the area of world politics. May be repeated for a maximum of 6 hours credit with permission of instructor.

5502. Post-Soviet Foreign Policies. (3). Basic concepts and methods of analyzing the international relations and foreign policies of post-soviet territory, with emphasis on Russia and Ukraine.

6504. International Law. (3). An analysis of the nature, scope, duties, rights, and evolutionary trends of international law.

6506. Problems in American Foreign Policy. (3). Studies or problems of American foreign policy. May be repeated for a maximum of 6 hours credit with permission of instructor.

6508. Theories and Concepts in International Relations. (3). Theoretical approaches to study of international politics. Consideration of various schools of thought, methods, and substantive literatures.

6510. International Political Economy. (3). Consideration of manner in which political processes affect and are affected by economic processes at global level.

6601. Political Psychology. (3). The impact of psychological dynamics and states, including socialization, cognition, attitude, and motivation on political outcomes such as voting behavior, ethnocentrism, and decision making. Particular emphasis will be given to the application of social psychological concepts and theories as well as to experimental methods.

6710-19. Special Topics in Political Science. (1-3). Topics of current significance in public issues.

7100-8100. Seminar in Scope and Methods of Political Science Research. (3). Survey of major theoretical approaches to study of politics with emphasis on both analytic and empirical aspects of political inquiry.

7201-8201. Seminar in American Politics. (3). Selected topics in American government and politics. May be repeated for a maximum of 6 credit hours.

7202-8202. Seminar in Government of the United States. (2-3). Analysis of the principal institutions of the federal government of the United States, including Congress, the Presidency and the Supreme Court.

7213-8213. Seminar in Public Policy Analysis. (3). Empirical and normative analysis of public policy at the local, state, national, and international levels. Emphasized are the theories, literature, and methodologies current to this field. **PREREQUISITE:** POLS 6101 or equivalent or permission of graduate coordinator.

7224-8224. Seminar in Urban Problems. (3). Problems inherent in the growing urban developments in the United States. The governmental organization of metropolitan areas and the difficulties of coordination of government functions. Proposed remedies and the reception of new approaches in selected metropolitan areas.

7225-8225. Seminar in Problems in State Government. (3). Selected policy making processes and policy problems arising from the operation of legislative, administrative, and judicial machinery. Special attention will be given to Tennessee.

7302-8302. Seminar in Comparative Politics. (3). Selected topics in comparative politics. May be repeated for a maximum of 6 credit hours.

7303-8303. Seminar in Political Development. (3). Comparative study of the process of political change in traditional developing nations.

7401-8401. Seminar in Political Theory. (3). Contribution of political philosophy to full understanding of politics is illustrated through selected topics. May be repeated for a maximum of 6 hours.

7501-8501. Seminar in International Relations. (3). Selected topics in international politics and foreign policy. May be repeated for a maximum of 6 credit hours.

7502-8502. Seminar in International Conflict and Security. (3). Comparative and theoretical examination of how national and international actors conceptualize, identify, perceive, and address threats to their security; includes technological and social change, capabilities and limitations of defense decision makers and bureaucracies, and role of international institutions.

†7503. Reading for Comprehensives. (3). Arranged on an individual basis for graduate students in political science, public administration, or health administration only. **PREREQUISITE:** Completion of degree requirements or in the last two semesters of program.

7504-8504. Seminar in Government of Western Europe. (2-3). Politics and policies of Western Europe, with emphasis on the nations of Britain, France and Germany and integration processes occurring within the European Community.

7505-8505. Seminar in Latin American Politics. (2-3). Developmental challenges that confront Latin American nations, configurations of political institutions with which those nations address those chal-

allenges, and changing patterns of state-society relationships that result from the politics of development in Latin America.

7600-8600. Seminar in Administrative Theory. (3). Significance of public administration in American government includes an introduction to formal organization theory and bureaucracy, decision-making theory, leadership and motivational theory, and current trends and problems in the study of public administration.

7601-8601. Research Methods in Public Administration. (3). Issues and techniques in data collection for design and implementation of independent research projects; logic of conducting research in public administration, measurement, and sampling; introduction to program evaluation and specific quantitative decision-making techniques. **PREREQUISITE:** POLS 6101 or permission of the instructor.

7602-8602. Public Budgeting and Finance Administration. (3). (6602). Detailed study of administrative and political problems of fiscal policy, the budgetary process, and fiscal controls.

7603-8603. Public Sector Collective Bargaining. (3). Employee organizations and the development of collective relations in the public and hospital sectors. Special topics include unions and management wage policies, collective negotiation and bargaining, and the evaluation of the impact of unionization on public policy and union relations in the nonprofit sector.

7604-8604. Social Science in Law. (3). Applications of social science to such public policy questions as discrimination, obscenity, parole, trademarks, death penalty, child custody, and criminal offender profiles.

7605-8605. Human Resources Administration. (3). Policies, methods, and techniques utilized in public and health organizations; special attention is given to problems reflecting contemporary demands upon human resource systems, capacity to diagnose problems, select the most effective means of addressing them, and plan appropriate courses of action developed through case studies.

7606-8606. Seminar in Administrative Law. (3). (6611). Role and nature of administrative law, including procedural requirements and judicial review of administrative actions and liability of government for torts and breach of contract.

7607-8607. Public Management Leadership. (3). Theoretical and applied aspects of public and nonprofit leadership addressed in a holistic approach; focus on the most current literature and public debate; leadership examined from the various perspectives reflected across the curriculum: administrative theory, public law, finance, ethics, research methods, and public policy.

7608-8608. Public Management Information Systems. (3). Analysis and application of responsibilities of public organization managers; focus on technological strategies and skills for meeting those responsibilities including budget processes, information systems and dissemination, decision-making, citizen participation, and program development and evaluation.

7609-8609. Seminar in Administrative Ethics. (3). Introduction to ethical theories and principles as they apply to practice of public administration, basic legal constraints such as conflict of interest laws, and more subtle ethical dilemmas that arise in the exercise of discretion of public administrators.

†7610. Internship in Public Administration. (3-6). Participation in some type of field experience, including a written report critically describing the student's responsibilities. Field experience may result from a supervised internship in cooperating public or nonprofit organizations or from appropriate administrative experience if the student is employed in a public or nonprofit organization. **PREREQUISITE:** Permission of graduate coordinator.

7611. Practicum. (3-6). The application of knowledge, concepts and analytical tools to contemporary issues that challenge modern managers. Individuals select special projects to pursue in local public and nonprofit organizations and conduct research on these projects under the guidance of a faculty committee or work with the Institute of Governmental Studies and Research on current problems in public administration. May be repeated for a total of 6 credits. **PREREQUISITE:** Permission of graduate coordinator.

7612-8612. Program and Policy Evaluation. (3). (6605). Models, theories, and techniques of program and policy evaluation in public administration; evaluation research design, data collection and analysis, dissemination of results and possible applications of evaluations

to policy-making and administration; organizational and political contexts of evaluation.

†7613. Proseminar in Professional Development. (3). Introduction to public and health administration professions with emphasis on career development; employment opportunities, computer resources, professional associations, submission and publication of articles. Faculty and student presentations. Repeatable.

7634-8634. Developing Public Human Resources. (3). Organizational, group, and individual development processes and philosophy for public, non-profit, and health care agencies; special emphasis on application of knowledge and skills.

7635-8635. Issues in Public Human Resources. (3). Special issues of current interest that relate to management, planning, and development of human resources in non-profit and public agencies.

7641-8641. Theory and Practice of Nonprofit Administration. (3). Introduction to theoretical foundations, structures, and processes of nonprofit organizations; historical development and impact, social, political, legal, and economic environment in which nonprofit organizations exist, and complexities of organizational governance shared by volunteer and professional staff decision makers.

7642-8642. Resource Development in Nonprofit Organizations. (3). Introduction to various resources important to nonprofit organizations including financial support, volunteers, and community awareness, and to wide range of organization activities utilized for acquisition and maintenance of these resources.

7702-8702. Independent Study. (1-3). May be repeated for a maximum of six hours. Independent investigation of research problems or directed readings in selected area of political science. **PREREQUISITE:** Permission of instructor.

7710-19-8710-19. Special Topics in Political Science. (1-3). Intensive study of selected topics in political science. May be repeated for a maximum of six hours.

†7996. Thesis. (1-6). The student must write and defend satisfactorily a thesis on a subject approved by the major professor.

HEALTH ADMINISTRATION (HADM)

7101-8101. Health Systems. (3). (POLS 7-8621) Analysis of health and medical care systems with reference to public, private and voluntary agencies at local, state, regional, and national levels orient the administrator to health and medical care systems with which he may work.

7102-8102. Law of Health Administration. (3). (POLS 7-8625) Private health law, including professional liability, the relationship of physician and patient, reform of tort system for medical injuries, health care institutions, and access to health care.

7103-8103. Health Planning. (3). (POLS 7-8622) Application of strategic planning and marketing concepts and techniques to health care sector; focus on strategy formation, strategic planning process, and marketing management; special emphasis given to distinctive characteristics of marketing in health care organization. **PREREQUISITE:** HADM 7101 or permission of graduate coordinator.

7104-8104. Health Care Administration. (3). Overview of techniques for financial management in health care setting. Topics include revenue sources and mix; capital budgeting; cash, debt, property and internal services management; business plan development. **PREREQUISITE or COREQUISITE:** HADM 7101 and HADM 7103 or permission of graduate coordinator.

7105-8105. Government Regulation of Health Services. (3). (POLS 7-8624). Public law regulation, including health care quality, establishing personhood and individual autonomy, life and death decision, antitrust, health care financing and cost control.

7106-8106. Health Services Research. (3). (POLS 7-8106). Issues and techniques in data collection for design and implementation of independent research projects; logic of conducting health services research, measurement, ethical considerations, logic of sampling, various methods of collecting data for health services research, and writing research proposal; introduction to program evaluation and specific quantitative decision-making techniques; overview of epidemiological concepts and techniques.

7107-8107. Health Ethics. (3). (POLS 7-8107). Introduction to ethical theories and principles; application to profession of health administration.

7109-8109. Health Administration Information Systems. (3). Overview of electronic data systems (EDSs) in clinical settings. Topics include use of EDSs to disseminate clinical practice guidelines, coordinating/ managing care, and evaluating process/outcomes at the patient/client, provider, and/or payer interface. A project that explores EDS usage in the clinical setting is expected. **PREREQUISITE:** HADM 7101 **COREQUISITE:** HADM 7103.

7110-8110. Health Management Leadership. (3). Synthesis of theories, strategies, and systems of managing and leading health care organizations; community leadership, accreditation, governance, quality assurance, credentialing and privileging; emphasis on team leadership skills, utilization and outcome analysis, and mapping processes and structures. (Capstone Course).

7111-8111. Issues in Health Services Administration. (3). (POLS 7-8627) Seminar for discussion of issues affecting administrators of health services organizations. Includes issues such as right to die, responsibility for health, access for underserved populations, organ transplantation. **PREREQUISITE:** Permission of graduate coordinator.

7113-8113. Managed Health Care. (3). Role of health service administrator in a managed care organization (MCO); theories of negotiation, incentives structure, pricing, and information systems applied to practical management situations for the MCO administrator. Issues in public/private managed care markets addressed in class lecture, discussion, and group/individual projects.

7114-8114. Long-term Care Administration. (3). Overview of the continuum of long-term care (LTC) services. Topics include philosophy and history of LTC, demographic and epidemiological determinants of LTC, management concerns in the continuum of LTC, regulation of LTC facilities, financing of LTC services, and the future of LTC. **PREREQUISITE** or **COREQUISITE:** HADM 7101 or permission of graduate coordinator.

7115-8115. Public Health Systems. (3). Introduction to analysis of public health systems in the US: examines inner mechanisms of public health system; analyzes relationships between public and private health care delivery systems; reviews public health system's roles, themes, and paradigms to improve systems; explores future challenges.

7116-8116. Administration of Health Services Organizations. (3). Introduction to analysis of administrative practices in health services organizations: examines leadership roles, analyzes impact of professional roles on process within the organization, examines evolution of organizational design, appraises accountability relative to public trust.

7117-8117. Ambulatory Practice Management. (3). Examines environmental context, financial management, operations management, human resources management, planning and marketing, and strategic management within the variety of ambulatory settings.

7120-8120. Independent Study. (3). Independent investigation of research problems or directed readings in selected area of health administration. May be repeated for a maximum of six hours. **PREREQUISITE:** Permission of instructor.

†7190. Internship in Health Administration I. (3). Participation in a field experience program, including a written report critically describing the student's responsibilities. Field experience may result from a supervised internship in cooperating public and non-profit organizations or from an appropriate administrative experience if the student is employed in a public or non-profit organization. **PREREQUISITE:** Permission of the Graduate Coordinator.

†7191. Internship in Health Administration II. (6). Participation in a field experience program, including a written report critically describing the student's responsibilities. Field experience may result from a supervised internship in cooperating public and non-profit organizations or from an appropriate administrative experience if the student is employed in a public or non-profit organization. **PREREQUISITE:** Permission of the Graduate Coordinator.

7605-8605. Human Resources Administration. (3). Policies, methods, and techniques utilized in public and health organizations; special attention is given to problems reflecting contemporary demands upon human resource systems, capacity to diagnose problems, select the most effective means of addressing them, and plan appropriate courses of action developed through case studies.

7702. Special Topics in Health Administration. (3). Application of Health Administration principles and research methods to the study of a special problem in Health Administration selected to meet the particular needs and interests of each individual student. **PREREQUISITE:** Permission of the Graduate Coordinator.

†Grades of S, U, or IP will be given

Psychology

ANDREW W. MEYERS, Ph.D.,
Chair and
Coordinator of Graduate Studies
Room 202, Psychology Building
(901) 678-2145

E-mail: dtally@mail.psy.memphis.edu
<http://psy.memphis.edu/psy.htm>

MEMBERS

- JEFFREY S. BERMAN, *Professor*
Ph.D. (1979), Harvard University [1999]
BRUCE A. BRACKEN, *Professor*
Ph.D. (1979), University of Georgia [2005]
ROBERT COHEN, *Professor*
Ph.D. (1975), Miami (Ohio) University [2005]
WILLIAM O. DWYER, *Professor*
Ph.D. (1969), Southern Illinois University [2001]
THOMAS K. FAGAN, *Professor*
Ph.D. (1969), Kent State University [2000]
J. BARRY GHOLSON, *Professor*
Ph.D. (1968), University of Iowa [2000]
ARTHUR C. GRAESSER, *Professor*
Ph.D. (1976), University of California at San Diego [2002]
DAVID A. HOUSTON, *Assistant Professor*
Ph.D. (1989), Indiana University [2005]
ARTHUR C. HOUTS, *Professor*
Ph.D. (1981), SUNY at Stony Brook [2003]
ROBERT C. KLESGES, *Professor*
Ph.D. (1980), University of Wyoming [2002]
ROGER J. KREUZ, *Associate Professor*
Ph.D. (1987), Princeton University [2004]
FRANK C. LEEMING, *Professor*
Ph.D. (1963), University of Mississippi [2000]
KENNETH L. LICHSTEIN, *Professor*
Ph.D. (1976), University of Tennessee [2005]
CHARLES J. LONG, *Professor*
Ph.D. (1966), Vanderbilt University [2000]
MICHAEL B. LUPFER, *Professor*
Ph.D. (1964), University of Miami (Florida) [2002]
WILLIAM MARKS, *Associate Professor*
Ph.D. (1983), University of California [1999]
ANDREW W. MEYERS, *Professor*
Ph.D. (1974), Pennsylvania State University [2005]
GUY MITTLEMAN, *Associate Professor*
Ph.D. (1985), University of Michigan [2003]
SAM B. MORGAN, *Professor*
Ph.D. (1964), University of Arkansas [2000]
DAVID M. MURRAY, *Professor*
Ph.D. (1978), University of Tennessee [2004]
ROBERT NEIMEYER, *Professor*
Ph.D. (1982), University of Nebraska [2005]
NAFTALI RAZ, *Associate Professor*
Ph.D. (1985), University of Texas at Austin [2002]
SARAH RAZ, *Associate Professor*
Ph.D. (1988), University of Texas [2004]
WILLIAM R. SHADISH, JR., *Professor*
Ph.D. (1978), Purdue University [2003]
JEANNETTE P. WARD, *Professor*
Ph.D. (1967), Vanderbilt University [2000]
JAMES P. WHELAN, *Associate Professor*
Ph.D. (1989), Memphis State University [2002]

ASSOCIATE MEMBERSSYDNEY EY, *Assistant Professor*

Ph.D. (1993), University of Vermont [2001]

XIANGEN HU, *Assistant Professor*

Ph.D. (1993), University of California-Irvine [1999]

KATHERINE KITZMANN, *Assistant Professor*

Ph.D. (1997), University of Virginia [2001]

WENDY C. NAUMANN, *Assistant Professor*

Ph.D. (1998), University of Nebraska [2004]

BRYANT RIEDEL, *Project Coordinator*

Ph.D. (1995), University of Memphis [2002]

LESLIE A. ROBINSON, *Assistant Professor*

Ph.D. (1990), Memphis State University [2000]

PRITI SHAH, *Assistant Professor*

Ph.D. (1995), Carnegie-Mellon University [2002]

ADJUNCT MEMBERS

CHARLOTTE M. FREEMAN

Ph.D. (1996), University of Miami [2001]

JOEL I. JOHNSON

Ph.D. (1977), University of Mississippi [2001]

MARK JONES

Ph.D. (1975) Memphis State University [2001]

EDGAR J. NOTTINGHAM, IV

Ph.D. (1979), Virginia Polytechnical Institute [1999]

THERESA M. OKWUMABUA

Ph.D. (1982), Memphis State University [2000]

RUSS REYNOLDS

Ph.D. (1987), Ohio University [2001]

ROBERT M. SERINO

Ph.D. (1977), Mississippi State University, Starkville [1999]

RIC G. STEELE, JR.

Ph.D. (1998), University of Georgia [2001]

BRITT THOMAS

Ph.D. (1995), University of Tennessee, Knoxville [2001]

J. WILLIAM TOWNSEND

Ph.D. (1978), Memphis State University [2005]

- I. The Department of Psychology offers Ph.D. programs in Clinical Psychology, Experimental Psychology, and School Psychology, an M.A. (terminal, non-thesis) program in School Psychology, and an M.S. (either thesis or non-thesis) program in General Psychology. Students admitted to one of the Ph.D. programs complete the requirements for the M.S. in General Psychology (with thesis) as part of their Ph.D. requirements. An Ed.S. degree with a major in Education and an area of emphasis in School Psychology is also available (offered collaboratively with the College of Education). In addition, the M.S. in General Psychology program may be entered as a terminal program.

Admission to each of these programs is handled separately. Each has its own admission criteria, and application must be made for a particular program before an applicant is considered for that program. Any person admitted to one of these programs who desires to transfer to another program within the department must make formal application to that program and will be evaluated competitively against the same criteria and on the same time schedule as all other applicants for that program.

The departmental objective is to educate both experimentally sophisticated professional psychologists and professionally appreciative research psychologists. The department professes a strong research emphasis, with a very diverse array of theoretical models and frames of reference represented on the faculty.

For all of the following graduate programs, admission is not automatic by meeting minimal departmental admission requirements. Students are selected from a pool of qualified applicants to each program. Each year the number of students admitted to a program depends on availability of financial aid and adequate faculty supervision.

II. M.S./Ph.D. Degree Program

In these programs the M.S. is preparatory to continuation in the program. In order to be advanced to doctoral study, a student must have satisfactorily completed all requirements for the M.S. (with thesis) at The University of Memphis, or have completed an equivalent degree from another institution. Students possessing a master's degree without a thesis will be required to complete a thesis before being advanced to doctoral study.

There are three broad programs within the M.S./Ph.D. degree program: Clinical Psychology (APA approved), School Psychology, and Experimental Psychology. Faculty and students from all three programs participate in six research areas: Adult Psychopathology and Psychotherapy, Behavioral Medicine and Community Psychology, Child and Family Studies, Cognitive and Social Processes, Neuropsychology and Behavioral Neuroscience, Re-

search Design and Statistics. Students interested in other areas should contact the department for further information.

A. Program Admission and Prerequisites

Applicants to the M.S./Ph.D. degree program are evaluated once each year only, for admission in the Fall semester; applicants for Spring admission are not considered. All application information must have been received by February 1 for a candidate to be considered for admission.

Required:

1. A grade point average of at least 2.5/4.0 in all undergraduate course work. Applicants with undergraduate records at this minimum level are not ordinarily admitted.
2. A minimum of 18 semester hours in undergraduate psychology courses, including courses in Quantitative Methods (Psychological Statistics), and Experimental Psychology; undergraduate coursework in Physiological Psychology, Psychology of Learning, and History of Psychology is strongly recommended. Students lacking some or all of these prerequisite courses, but presenting an exceptional undergraduate record, may be granted graduate admission as regular, or as special, students; they will be expected to remove all undergraduate deficiencies during their first academic year.
3. GRE scores (Verbal, Quantitative, Analytic) are taken into account in the admissions process.
4. Letters of recommendation from at least three persons familiar with the applicant's academic background and aptitude for graduate work in psychology, specifying in detail the applicant's capabilities for graduate study and for future performance as a psychologist.
5. A statement of 500-1000 words indicating the specific graduate program area being applied for, the applicant's present interests and career goals, research and applied interests, and prior research and applied experience. Prior undergraduate research interests and research involvement are weighted heavily.
6. A willingness to be interviewed by members of the department faculty, should that be required.

B. Program Requirements

1. **Credit Hours:** A minimum of 33 semester hours of graduate credit beyond the bachelor's degree is required for the M.S. degree in Psychology, and a minimum of 80 semester hours of graduate credit beyond the bachelor's degree is required for the Ph.D. degree in Psychology. However, most students in this department take between 90 and 100 credits in courses, seminars, and applied and research practicum toward the Ph.D. degree. All work for graduate credit must be approved by, and must be completed at a level of performance satisfactory to the graduate faculty of the department. No minor is required; students may take coursework for degree credit outside the department upon prior approval of the graduate faculty of the department.

Students with graduate credits earned at another institution, upon matriculation at The University of Memphis, may petition to have these credits applied toward their degree requirements at The University of Memphis. While such credits are not automatically transferred and must be approved by the area faculty, a maximum of 6 semester credit hours earned elsewhere may be applied toward the master's degree requirements. For transfer students who have attained a master's degree elsewhere, a maximum of 50 semester credit hours may be applied toward the Ph.D. degree requirements.

Particularly where students are specializing in a professional area, the awarding of the doctorate does not merely attest to the accumulation of the specified number of hours in the classroom but also to the acquisition of sophisticated professional and research skills. The faculty has the responsibility to both the public and the profession of psychology to award this degree only when the student has achieved a satisfactory level of professional and research competencies as judged by the graduate faculty of the department. Further, students must exhibit high integrity and moral character consistent with the standards of ethical principles set forth by the American Psychological Association and Tennessee law.

2. **Enrollment:** With only rare exception, all M.S./Ph.D. degree candidates are expected to carry a minimum of 12 credits per semester, and to devote full time during their enrollment to pursuit of degree-related activities.
3. **Research:** All M.S./Ph.D. degree students are expected to be active in research collaboratively with members of the department faculty each semester they are enrolled.
4. **Master's Thesis (PSYC 7996) and M.S. Comprehensive Examination:** Each M.S. student is expected to complete an independent research project, culminating in a master's thesis. As students are only able to apply 3 hours of thesis credit toward their degree program, student enrollment in thesis hours is restricted to the semester that they defend. That semester they are able to enroll for 3 hours. If the thesis is not successfully defended, the student must continue to enroll for 1 hour of thesis credit each semester enrolled until the defense is completed. Upon completion of the thesis, the student takes an oral examination which assesses not only mastery of the thesis topic but also broader awareness of the theoretical and empirical issues in contemporary psychology. This oral examination serves as the M.S. comprehensive examination.
5. **Specialty Examination:** Each Ph.D. student will take a comprehensive written, oral and performance examination in the student's major area of specialization in psychology, typically during the third or fourth year of residence. Major Area Papers (PSYC 8620) may be used as an option to the written specialty examination.

6. *Comprehensive Educational Program*: In order that all M.S./Ph.D. candidates obtain comprehensive training in the diverse areas of psychology, they are required to complete PSYC 7301, 7302, 7303 during the first two years. In addition, all M.S./Ph.D. candidates must complete a third statistics/quantitative course approved by the department plus at least one course in each of the following four areas:

- Biological Bases of Behavior: PSYC 7701-8701; 7702-8702, 7703-8703, 7704-8704, or 7506-8506 for School Psychology students.
- Cognitive-affective Bases of Behavior: PSYC 7208- 8208, 7210-8210, 7211-8211, 7222-8222, 7801-8801, or 7207-8207 for School Psychology students.
- Social Bases of Behavior: PSYC 7200-8200, 7206-8206, 7215-8215, 7217/ 8217, 7219-8219, 7220-8220, or COUN 7531-8531 for School Psychology students.
- Individual Behavior: PSYC 7207-8207, 7219-8219, 7412-8412, 7416-8416, 7420-8420, 7516-8516, or 7802-8802 for School Psychology students.

7. *Dissertation and Final Examination* (PSYC 9000): Upon completion of an independent dissertation research project acceptable to the faculty, each student will take a final oral examination oriented toward, but not exclusively on, the student's dissertation research and major area of specialization.

Students in the clinical psychology program are expected to meet these additional requirements:

8. *Required Courses and Activities for Clinical Students*: Students in the clinical psychology program must complete the following courses: PSYC 7412-8412, 7428-8428, 7430-8430, 7432-8432, and 6 credit hours of PSYC 7434-8434 (two courses of 3 hours credit each under two different clinical faculty members). As part of their clinical training, they must also participate in the activities of the Psychological Services Center. Students fulfill this requirement sitting in on the psychotherapy supervision of advanced clinical students for at least one-half hour per week during the first year and by enrolling in 7438-8438, 3 credits in the fall and 3 credits in the spring, during each of years two, three, and four in the clinical program.

Funding during years two and three is fully integrated with scientist/practitioner training. Clinical students are required to take a one year clinical practicum in an external agency and a one year departmental research assistantship. The sequence of these two years will be determined on an individual basis. Funding during year four will be available at the students' option. The type of funding during year four may be in either of these areas depending upon personal preference, educational need, and funding source availability.

(a) *Clinical Program Students in the Neuropsychology and Behavioral Neuroscience Research Area*. In addition to the general clinical requirements, clinical program students in the Neuropsychology and Behavioral Neuroscience Research Area must complete the following courses: PSYC 7701-8701, 7702-8702, 7703-8703, 7704-8704; nine credit hours of PSYC 7608-8608; nine credit hours of PSYC 7616-8616; and coursework in the areas of neuroanatomy and neuropathology.

(b) *Clinical Program Students in the Child and Family Studies Research Area*. In addition to the general clinical requirements, clinical program students in the Child and Family Studies Research Area must complete the following courses: PSYC 7207-8207, 7219-8219, 7416-8416, 7804-8804, and 7808-8808. Further, the requirement of two psychotherapy courses applicable to all clinical students must consist of family therapy (which may be satisfied by 7417-8417) and child behavior therapy (which may be satisfied by 7418/8418). Further, a major portion of practicum work must involve children, and the master's thesis and doctoral dissertation must pertain to children.

9. *Clinical Internship*: For students in clinical psychology, a full-time one-year internship, in an agency approved by the director of training in clinical psychology, is required. A student cannot accept an internship unless the dissertation proposal has been approved in January of the year that the internship starts. Further, the dissertation data must be collected before the student can begin internship unless the internship agency gives written permission to the student to collect data while on internship.

10. Students in the School Psychology concentration of the Child and Family Studies Research Area must complete a total of 102-108 graduate hours including: Psychology 7800-8800, 7803-8803, 7804-8804, 7805-8805, 7806-8806, 7807-8807, 7808/8808 and RDNG 7541-8541, COUN 7582/8582, LEAD 7004, EDPS 7112-8112, and SPED 7000-8000.

Electives (18 hours); students may choose to take all electives in a subspecialty area to be determined with the adviser.

Practicum 7614-8614 (3-9 hours) and Internship 7812- 8812 (12 hours).

II. M.A. and Ed.S. Degree Program In School Psychology

This program is offered collaboratively with the College of Education, and coursework from both areas is required. Students entering the program must complete both the M.A. and the Ed.S. degrees, including an internship of one school year, in order to obtain an endorsement for certification. The Ed.S. degree is an advanced sequence in the specialty and is to be pursued only by persons who have completed the M.A. degree or comparable degree with a concentration in school psychology, or who already hold school psychology certification. The program is part of the College of Education unit, accredited by the National Council for Accreditation of Teacher Education (NCATE),

and has met the folio review requirements of the National Association of School Psychologists (NASP)/NCATE Guidelines; also, it is formally approved by the Tennessee State Department of Education, and leads to that agency's license in school psychology.

A. Program Admission and Prerequisites

- An undergraduate overall grade point average of 3.00/4.00. Applicants with an undergraduate GPA below this minimal level are admitted only if other supporting data are exceptional.
- GRE scores (Verbal, Quantitative, Analytic) are taken into account in the admissions process.
- Letters of recommendation from at least three persons familiar with the applicant's academic background, aptitude for graduate work in school psychology, and interest in working with school-age children in school settings; professional educators, psychologists, and/or employers.
- Undergraduate preparation in Psychology and/or Education. It is strongly recommended that applicants have at least 18 undergraduate hours in Psychology and/or Education, with preparation in the psychology of learning, psychological appraisal/measurement human growth and development, and foundations of education. Those admitted must take a minimum of 9 hours each semester.

B. Program Requirements—M.A. Degree (36 credits)

- Psychology courses* (21 hours): PSYC 7800, 7207, 7802, 7803, 7804, 7805, 7806.
- Education courses* (15 hours): EDPR 7121, EDRR 7511 and 7541, LEAD 7004, SPED 7000 (or SPED elective if characteristics of exceptional children course was taken at the undergraduate level).
- Oral examination*.
- Participation in service experiences* in the Psychological Services Center or other agency placements for training purposes are required.

C. Program Requirements—Ed.S. Degree (30 credits)

- Psychology courses* (9 hours): PSYC 7614 (6 hours), 7301 or research elective.
- Education courses* (9 hours): EDPR 7112, RDNG 7541 or 7542, COUN 7542.
- School Psychology Internship* (PSYC 7812, 6 hours) is taken at or near the completion of other work.
- Written examination*.

IV. M.S. Degree Program in General Psychology

A. Program Admission and Prerequisites:

- An undergraduate grade point average of 2.5/4.0 is required for admission without special permission.
- GRE scores (Verbal, Quantitative, Analytic) are taken into account in the admissions process.
- Letter of recommendation from at least three persons familiar with the applicant's academic background and aptitude for graduate work in Psychology.
- It is strongly recommended that applicants have 12 undergraduate hours in psychology, including a course in statistics.
- Applications to the M.S. in General Psychology program will be considered in the fall semester.

Admission to the M.S. in General Psychology program does not require a student to take any minimum number of credits per semester. The only constraint upon the pace at which the student pursues the degree is that credits more than six years old may not be counted toward the degree.

B. Program Requirements

- All students in the M.S. in General Psychology program must be in good academic standing at the end of 15 credit hours of graduate work in order to continue in the program.
 - PSYC 7301 or equivalent
 - PSYC 7302 or equivalent
 - At least one of PSYC 7206, 7207, 7208, 7210, 7217, 7219, 7701
 - Six additional credit hours of graduate work in Psychology exclusive of field practica, research practica, clinical practica, seminars and special topics courses (unless specifically designated otherwise) and core clinical courses (7431, 7432, 7433, 7434).
- On completion of the first 15 hours, it is expected that the student will, in consultation with the coordinator or major professor, have decided on goals and objectives for the remainder of the course of study. Courses that fit these goals and objectives may be in Psychology or other departments in the university. Students who are not in good academic standing at this time must institute an appeal with supporting letters to the Coordinator and M.S. in General Psychology Committee for consideration of continuance in the program. Such cases will be considered on an individual basis.
- A total approved program of 33 credit hours if the student elects to do a thesis, or 36 credit hours without a thesis.
- A specialty examination covering the student's area(s) of focus will be taken during the last semester in the program.

PSYCHOLOGY (PSYC)

7000-8000. *Issues in General Psychology* (3). Required of all Experimental and School Psychology doctoral degree candidates. Seminar of basic issues in contemporary psychology within their historical context with extensive examination of their implications for theoretical and professional applications.

7010-29-8010-29. Special Topics in Psychology. (1-3). Topics are varied and announced in *Schedule of Classes*.

7108-8108. Psychology and Law. (3). Interface between law and psychology, covering such topics as malpractice, competency or insanity hearings, divorce and child custody, commitment procedures, right to treatment, and confidentiality. Of particular interest to students planning to practice as professionals. PREREQUISITE: Admission to graduate training program in Clinical Psychology or permission of instructor.

7200-8200. Social and Community Intervention. (3). Substantive issues and topics in community psychology, applied social psychology, public policy, and program evaluation. Of particular interest to students interested in applying psychology to social problem solving.

7203-8203. Behavior Analysis. (3). A comprehensive treatment of behavioral principles in their application to simple and complex forms of behavior. The course focuses on operant conditioning of animal behavior and demonstrates the basic behavioral principles at work in their simplest form. These operant conditioning principles are extended to human behavior occurring in the natural environment. Increasingly complex human behaviors are successively introduced.

7206-8206. Group Processes. (3). Social psychology of groups and organizations including social influence, leadership, and inter- or intra-group behavior.

7207-8207. Developmental Psychology. (3). An analysis of the course of development from conception to young adolescence in the "normal" individual. Emphasis on developmental methodologies and theories in the areas of physical and motor development, and cognitive and intellectual functioning.

7208-8208. Psychology of Perception. (3). An examination of the historical development, research, and major theoretical positions in the area of perceptual psychology. Major emphasis is placed on theoretical and experimental treatment of the basic perceptual phenomena.

7210-8210. Psychology of Learning. (3). Examination and discussion of current research, and of theoretical and experimental problems in the area of learning and behavior modification. Topics covered include reinforcement, extinction, motivation, generalization, discrimination, retention, and forgetting.

7211-8211. Cognitive Processes. (3). Analyses of thinking, conceptualization, language and symbolic activity, and related meditational processes in the individual.

7212-8212. Industrial Psychology. (3). Examination of the content and methodology used by industrial psychologists in personnel selection, classification, training, and performance evaluation. Students are familiarized with the skills necessary for these activities, as well as the guidelines and legal constraints on organizations' hiring, promotion, and performance evaluation practices.

7213-8213. Personnel Psychology. (3). An in-depth study of the theories and procedures used by personnel psychologists to conduct job analyses and apply the findings to the development of valid and reliable selection/promotion strategies and performance measurement instruments. The course includes a significant amount of hands-on experience so students acquire the knowledge and skills to competently carry out these activities in applied settings. PREREQUISITE: 7211-8211.

7214-8214. Industrial and Organizational Training. (3). Examination of the content and methodology used by industrial psychologists to develop, implement, and evaluate training programs in work settings. Students acquire the skills to conduct training needs assessments, select from various training platforms, develop training programs, and assess the degree to which they accomplish their organizational objectives. The course includes exposure to new computer-based and web-based training technologies.

7215-8215. Organizational Psychology. (3). The course deals with the major organizational determinants of individual and group behavior and performance. The characteristics of organization structure and climate are explored from both a classical and a contemporary viewpoint. Organization change and development theories are examined plus the major ancillary theoretical positions on leadership, individual and group performance, behavior modification, selection and training.

7216-8216. Behavior Management. (3). Application of the principles of operant/instrumental learning to human behavior change in various organizational, educational, and rehabilitative settings. Practical implementation of the principles of behavior analysis and management will be stressed and expected of the student. PREREQUISITE: PSYC 7203-8203 or equivalent.

7217-8217. Social Psychology I. (3). Review of theoretical and empirical literature examining behavior and experience of individuals in social settings; includes coverage of attributions and interpersonal perception, attitude formation and change, prejudice and stereotyping, interpersonal attraction, social influence, human aggression, and prosocial behavior.

7218-8218. Increasing Organizational Productivity. (3). Examination of the theories and methodologies used to diagnose organization problems, determine their causes, and select, implement, and evaluate interventions to mitigate the problems and increase organizational productivity. Students acquire a knowledge base and specific skills employed by organizational psychologists to help effect organizational improvements. The course involves lecture, discussion, and group projects.

7219-8219. Social and Personality Development. (3). A general survey of social and personality development from infancy through adolescence. The course consists of three sections: (1) general theoretical perspectives, including intrapsychic, cognitive, and social learning approaches; (2) intra-individual phenomena such as sex role, traits, moral development, etc.; (3) inter-individual phenomena such as family interactions, peer interactions, and societal influences.

7220-8220. Social Cognition. (3). Review of major contemporary issues in social psychology from a social cognitive perspective; cognitive-information processing approach as it applies to social psychology; attributions, schemas, attention and perception, impression-formation and social memory, accessibility and priming, the self, and decision making.

7222-8222. Psychology of Human Memory. (3). Major theoretical and empirical issues in the study of human memory; major emphasis on nature of structures and processes involved in memory encoding and retrieval and nature of representations available to memory.

7301-8301. Research Design and Methodology. (3). Emphasis on mathematical and nonmathematical analyses of psychological data, theoretical and experimental implications of different analyses, various data collection techniques, and types of experimental and statistical control; ethical issues and ethical principles of research conduct.

7302-8302. Advanced Statistics in Psychology I. (3). Introduction to general linear model; multiple regression analysis, and single- and multiple-factor analysis of variance; emphasis on using software programs to perform statistical analyses. PREREQUISITE: PSYC 3001 or equivalent.

7303-8303. Advanced Statistics in Psychology II. (3). Intermediate and advanced topics related to analysis of variance, including fixed and random effects, repeated measures, non-orthogonal designs and the analysis of covariance; traditional analysis of variance concerns within framework of general linear model; scales of measurement, planned and post hoc comparisons, power analysis and concept of effect size. PREREQUISITE: PSYC 7302 or equivalent.

7304-8304. Measurement Theory and Psychometrics. (3). Measurement theory involved in the construction and evaluation of psychological measuring instruments will be stressed. Particular emphasis will be placed on scaling methods and their use in psychological research and evaluation.

7305-8305. Quantitative Methods for Reviewing Research. (3). Quantitative procedures (meta-analysis) for reviewing research findings in psychology and other social sciences; techniques for locating and coding research studies, calculating effect sizes, and analyzing study findings. PREREQUISITE: Permission of instructor.

7306-8306. Linear Structural Modeling. (3). Path models, path analysis, cross-lagged panel studies, confirmatory factor analysis, and complete latent variable causal models, including applications of latter to experimental and non-experimental data.

7307-8307. Models of Program Evaluation. (3). History and nature of program evaluation, review of different approaches taken to evaluation by variety of major theorists in the field; practice in evaluation.

7308-8308. Multivariate Analysis of Variance. (3). Multivariate analysis of variance (MANOVA) with independent designs and its extension to repeated measures ANOVA. Goals include review conceptual bases, learn SPSS procedures, analyze simple and complex designs, and learn special post hoc procedures. **PREREQUISITE:** PSYC 7302 or equivalent.

7309-8309. Focus Group Research in Psychology. (3). Examination of the general logic of focus group research, including strengths and weaknesses of this approach. Methodology will be covered in depth, including how to plan a project, development of questions for a focus group, moderating the group, and analyzing and reporting data. Completion of a semester project is required.

7412-8412. Psychopathology. (3). Survey of the manifestations of abnormal behavior and psychological processes; detailed analysis of clinical and experimental literature concerning psychological and psychiatric disorders and their etiology. Historical principles are emphasized. **PREREQUISITE:** Permission of instructor.

7414-8414. Clinical Hypnosis. (3). Current major theoretical views of nature of hypnosis, its clinical applications in areas (e.g., psychotherapy, pain control, symptom control). Elementary skills in using hypnosis. **PREREQUISITE:** Permission of instructor.

7416-8416. Child Psychopathology. (3). A survey of the major theoretical formulations of childhood disorders, including learning, developmental, psychoanalytic and family systems theories. Organic, familial, and sociocultural influences are discussed. Emphasis is placed on basic research that contributes to our understanding of these difficulties. Traditional approaches to intervention are reviewed along with family treatment. **PREREQUISITE:** Permission of instructor.

7417-8417. Family Therapy. (3). Overview of family therapy as a treatment modality and point of view, emphasizing interdependence of theory, practice, and research. Focuses on the following approaches: brief problem-focused therapy; multigenerational family systems therapy; systemic family therapy; and behavioral couples therapy. **PREREQUISITE:** Permission of instructor.

7418-8418. Behavior Therapy with Children. (3). Applications of learning models to effect behavioral change in children reviewed from theoretical, experimental, and clinical perspectives. Emphasis on intervening in natural environment and using parents, teachers, and peers in treating problems such as low academic achievement, inadequate social skills, hyperactivity, and child abuse. A substantial practicum component may be added to the course that requires the student to provide therapy to at least one child. **PREREQUISITE:** Permission of instructor.

7420-8420. Personal Construct Theory. (3). In-depth seminar on personal construct theory, a cognitively oriented theory of personality stemming from work of George Kelly. Philosophical assumptions and basic theory; use of repertory grid technique and its application to research on such topics as cognitive complexity, development, interpersonal relationships, psychopathology, and psychotherapy.

7428-8428. Foundations of Clinical Psychology. (3). Introduction to fundamental concepts and methods of clinical psychology conceived as application of scientific reasoning to human problems; historical and scientific foundations for scientist-practitioner model, and various roles of clinical psychologist in social context; ethical, legal, and multi-cultural issues emphasized. **PREREQUISITE:** Admission to graduate training program in clinical psychology.

7430-8430 Clinical Assessment: Abilities and Achievement. (3). Introduction to psychological assessment of cognitive abilities and achievement; exposure to basic psychometric concepts; observation and interpretation of assessment related to behavior; specific emphasis on development of assessment skills such as test administration, test interpretation, and report writing. Ethical and legal issues of professional conduct emphasized. **PREREQUISITE:** Permission of instructor.

7432-8432. Clinical Assessment: Case Conceptualization. (4). Comprehensive review of fundamental concepts and practices of clinical assessment conceived as the application of scientific reasoning to problem of case conceptualization; development of conceptualization skills with integrating of interview, objective assessment, and systematic observations; evaluation of different assessment approaches for empirical support and utility in case management; critical and analytic thinking emphasized. Ethical and legal issues of professional conduct emphasized. **PREREQUISITE:** Permission of instructor.

7434-8434. Clinical Psychotherapies. (3). In-depth study of methods of psychotherapy and intervention strategies, their basic assumptions, spheres of applicability, and typical outcomes. Therapeutic approach covered will depend upon the particular instructor. May be repeated for maximum of 20 credits with change in topic. **PREREQUISITE:** Permission of instructor.

7435-8435. Introduction to Psychotherapy. (3). Required for all clinical students. Surveys major traditions of psychotherapy—psychodynamic, humanistic, cognitive-behavioral, and systemic, considering originators' works as well as contemporary exponents. Includes didactic (reading, discussion) and experiential learning (exercises, role plays) to promote both conceptual and practical acquaintance with the implications of each tradition. **PREREQUISITE:** Permission of instructor.

7437-8437. Clinical Special Studies. (1-3). Provides advanced conceptual discussion and supervised skill training in a variety of techniques not routinely covered in detail previously, thus amplifying in depth such clinical procedures as neuropsychological group therapy, implosive techniques, aversion methods, systematic desensitization, the design and execution of broad spectrum composite change programs, "inpatient management," and therapeutic community approaches. (Only nine hours may be counted toward degree requirements.) **PREREQUISITE:** Permission of instructor.

†7438-8438. Practicum in Clinical Treatment Approaches. (1-3). Practical experience to students in clinical psychology, permitting them to work under professional supervision for 42 therapy sessions in the Psychological Services Center. Students conduct intake interviews, administer and interpret psychological tests, and provide therapy. May be repeated for maximum of 24 hours credit. **PREREQUISITE:** Admission to graduate training program in clinical psychology.

The following seminars are systematic studies of current topics in the fields listed in the course titles. Only nine hours may be counted toward degree requirements.

7501-8501. Seminar: General Psychology. (3).

7502-8502. Seminar: Physiological Psychology. (3).

7503-8503. Seminar: Experimental Psychology. (3).

7504-8504. Seminar: Comparative Psychology. (3).

7505-8505. Seminar: Quantitative Psychology. (3).

7506-8506. Seminar: Clinical Psychology. (3).

7507-8507. Seminar: Industrial Psychology. (3).

7508-8508. Seminar: Research Design and Statistics. (3).

7509-8509. Seminar: School Psychology. (3).

7510-8510. Seminar: Organizational Psychology. (3).

7512-8512. Seminar: Developmental Psychology. (3).

7514-8514. Seminar: Cognitive Science. (3).

7515-8515. Seminar: Social Psychology. (3).

7516-8516. Issues in Psychotherapy Research. (3). Research evidence pertaining to basic questions about psychotherapy and its effectiveness; classic contributions and current research findings.

The following research practicum courses are individualized advanced laboratory or field research activities in the areas listed in the titles. Only nine hours may be counted toward degree requirements.

†7601-8601. Research Practicum: General Psychology. (1-3).

†7602-8602. Research Practicum: Physiological Psychology. (1-3).

†7603-8603. Research Practicum: Experimental Psychology. (1-3).

†7604-8604. Research Practicum: Comparative Psychology. (1-3).

†7605-8605. Research Practicum: Social Psychology. (1-3).

†7606-8606. Research Practicum: Clinical Psychology. (1-3).

†7607-8607. Research Practicum: Developmental Psychology. (1-3).

†7608-8608. Research Practicum: Neuropsychology. (1-3).

7609-8609. Research Practicum: School Psychology. (1-3).

†7610-8610. Field Practicum. Clinical Psychology. (1-6). (May be repeated for a total of 12 credits). Supervised experience in the use of psychological diagnostic, treatment, or community intervention procedures in various community agencies and facilities. **PREREQUISITE:** Admission to the graduate training program in Clinical Psychology, or consent of instructor.

†7611-8611. Field Practicum: Social Industrial Psychology. (1-3). (May be repeated for a maximum of 9 credits). Seminar discussion and supervised experience in the application of basic psychological procedures and principles to social, personnel, and organizational activities in various industrial, military and community settings

†7614-8614. Practicum: School Psychology. (3). (May be repeated for a maximum of 12 credits). Supervised experience in the application of psychological procedures in educational and clinical settings. A minimum of two practica are required. First practicum requires grades of 3.0 or better in PSYC 7803 and 7804; second requires 3.0 or better in PSYC 7805 and 7806, and S in first practicum. PREREQUISITE: Admission to graduate training program in school psychology and permission of instructor.

7615-8615. Special Problems. (1-3). (May be repeated for a total of 12 credits.) Independent investigation of a research problem, or directed readings, in a selected area of psychology chosen in consultation with the instructor. Only six hours credit may be applied to the degree. PREREQUISITE: Permission of instructor.

†7616-8616. Clinical Practicum: Neuropsychology. (3). (May be repeated for a maximum of 9 credits.) The advanced student interested in neuropsychology will receive supervised experience in the use of psychodiagnostic techniques in various community settings. This training will cover the basic diagnostic techniques, specialized diagnostic techniques, and neurological assessment procedures. PREREQUISITE: Permission of instructor.

†7617-8617. Seminar in Research Methodology. (3). Research seminar for students planning thesis/ dissertation work, developing other research projects, or interested in learning more about research design issues. Offers structured forum to present research ideas, receive advice on issues of design and analysis, and critique research designs of others.

†7618-8618. Research Practicum: Cognitive Psychology/Science. (1-3). May be repeated for a maximum of 9 credits.

†7619-8619. Research Practicum: Child and Family Studies. (1-3). May be repeated for a maximum of 9 credits.

7621-8621. Research Practicum: Introduction to Department Research. (3). This practicum is required of all first year doctoral students and may be taken by General Psychology Masters students. This course serves to introduce the student to research currently being conducted by faculty in the Department of Psychology. It may be repeated for a maximum of 6 credits.

7701-8701. Neuropsychology I. (3). A comprehensive study of the relationships between brain function and behavior. The anatomy and physiology of the nervous system will be reviewed. Major emphasis is on various functional systems of the human brain such as language, learning, attention, activation, and memory.

7702-8702. Neuropsychology II. (3). Historical circumstances effecting the development of neuropsychology, investigation of the various techniques available for assessing central nervous system function, brain-behavior relationships, and normative and actuarial data. Emphasis on strategies for assessing cerebral dysfunction and patterns of symptoms. PREREQUISITE: PSYC 7701.

7703-8703. Neuropsychology III. (3). Selective review of theoretical, research and applied issues in child neuropsychology, human brain development, hemispheric specialization, plasticity and effects of early trauma; childhood disorders associated with definite or suspected neurological impairment or dysfunction; introduction to child neuropsychological assessment as well as remediation and treatment of brain-related disorders in children. PREREQUISITE: PSYC 7701 or permission of instructor.

7704-8704. Neuropsychology IV. (3). Examination and discussion of current research in learning as it relates to nervous system function and damage to the anatomical substrates of such function. Emphasis on behavioral plasticity and recovery of function following destructive lesions. Other topics include memory, reinforcement, motivation and sensory substitution. PREREQUISITE: PSYC 7701.

7705-8705. Neuropsychopharmacology. (3). Introduction to the principles of neuropsychopharmacology starting from a grounding in pharmacology and neuronal structure and function, and progressing through neural communication, neurotransmitters, receptor theory and the principles of drug action in the peripheral and central branches of the nervous system. This course culminates with overviews of the major mental illnesses, schizophrenia, Parkinson's disease, Alzheimer's disease, anxiety

and depression; the psychotropic drugs used in their treatment in addition to descriptions of the behavioral paradigms used to model the disorders. PREREQUISITE: PSYC 7701 or permission of instructor.

7706-8706. Cognition and Aging. (3). Age-related changes in cognition in conjunction with aging of the central nervous system (CNS). Topics include: cellular and genetic mechanisms of aging; aging and sensory information processing; differential aging of memory, spatial abilities and language; aging of higher cognitive functions. PREREQUISITES: Graduate standing and consent of instructor.

7800-8800. Introduction to School Psychology. (3). Survey of school psychology including historical foundations, roles and functions, school and community practices, standards and ethics, issues, technological developments. Trends in credentialing and practice at the state and national level.

7801-8801. Human Learning and Development: Principles. (3). A survey of the psychological theories of human socialization with special emphasis on the empirical foundations of human learning and development. Special focus is on such processes as learning and transfer of training, cognitive and intellectual development and functioning, language acquisition and use, and information processing.

7802-8802. Children with Disabilities and their Families. (3). An overview of childhood disability and family considerations applied to psychological services in school and agency settings. Agency and family visitations provide experiential learning in addition to theory and research. PREREQUISITES: Course on characteristics of exceptional children and permission of instructor.

7803-8803. Psychoeducational Assessment I. (3). Critical analysis of intellectual assessment including skill development in administration, scoring, and interpretation of major individual tests of intelligence. Related psychoeducational instruments with emphasis on case study data collection and report writing. PREREQUISITE: Admission to graduate studies in psychology or permission of the instructor.

7804-8804. Psychoeducational Assessment II. (3). Critical analysis of personality assessment including skill development in administration, scoring, and interpretation of major personality assessment techniques. Related psychoeducational instruments with emphasis on case study data collection and report writing. PREREQUISITE: PSYC 7803 and permission of instructor. School psychology students must have a grade of 3.0 or higher in PSYC 7803.

7805-8805. Psychological Consultation. (3). This course teaches the theory and skills needed for providing consultation to students and families in educational and clinical settings. Focusing on an ecological, problem-centered model, content will include factors influencing the consultation process at the individual, group, and system level.

7806-8806. Interventions in School Psychology. (3). Students will acquire skills needed to provide individual, group, family and crisis intervention services to children and adolescents in educational and clinical settings. Course material will include empirically-validated interventions focusing on issues related to the academic, social, emotional, and psychological needs of the child/adolescent. PREREQUISITE: PSYC 7805-8805, COUN 7542 or equivalent.

7807-8807. Psychological Interventions III. (3). Students will refine skills in both direct and indirect school psychological services using empirically-validated interventions. Course material will cover current intervention issues in school psychology, the role of supervision in school psychology, evaluating the efficacy of interventions, and the link between assessment and treatment planning. PREREQUISITES: PSYC 7803-8803, 7804-8804, 7805-8805, and 7806-8806.

7808-8808. Psychoeducational Assessment III. (3). Introduction to psychoeducational assessment of preschool children; includes issues surrounding early assessment, skill development with preschool instruments, and related report writing, conferencing. PREREQUISITE: Permission of instructor.

7809-8809. Advanced School Psychology Practicum. (3). Applied experience utilizing both direct and indirect school psychological services and supervision. Students will assume the role of case manager providing comprehensive services for multiple clients. Students will also be expected to supervise students in the beginning intervention practicum. PREREQUISITE: Permission of instructor.

†7812-8812. Internship: School Psychology. (3-6). Supervised field placement in school and/or community agency settings. Requires a minimum of 1200 hours for the Ed.S. and 1500 hours for the Ph.D., at

least half of which must be in a school setting. May be repeated for a maximum of 6 hours applied toward either degree. **PREREQUISITE:** Admission to the school psychology program, permission of program coordinator, grades of S in all previous practica.

†7996. Thesis. (1 or 3). Independent research for master's degree. Application for writing a thesis must be filled out on an approved form after consultation with major professor and filed with the Dean of Graduate Studies. Only three hours may be counted toward degree requirements.

†8620. Major Area Paper. (3 or 6). Independent investigation of an approved topic of the student's specialization, leading to the preparation of a publishable paper following the format of the Psychological Bulletin or the Psychological Review. Only six hours may be counted toward degree requirements.

†9000. Dissertation. (1, 3, 6, or 9). Independent research for Doctor of Philosophy degree. Application for writing a dissertation must be filled out on an approved form after consultation with the major professor and filed with the Dean of Graduate Studies. Only nine hours may be counted toward degree requirements.

†Grades of S, U, or IP will be given

Sociology and Social Work

REBECCA F. GUY, Ph.D., *Chair*
Room 231 Clement Hall

JAMES D. PRESTON, Ph.D.,
Coordinator of Graduate Studies
Room 211, Clement Hall
(901)-678-2611

E-mail: rguy@cc.memphis.edu
www.people.memphis.edu/~socioinfo/

MEMBERS

- REBECCA F. GUY, *Professor*
Ph.D. (1971), Oklahoma State University [2001]
LARRY R. PETERSEN, *Professor*
Ph.D. (1977), Washington State University [2000]
CAROL RAMBO RONAI, *Assistant Professor*
Ph.D. (1993), University of Florida, [2004]
BARBARA ELLEN SMITH, *Associate Professor*
Ph.D. (1981), Brandeis University, [2004]

ASSOCIATE MEMBERS

- PHYLLIS G. BETTS, *Associate Professor*
Ph.D. (1978), University of Chicago [2001]
GREGORY V. DONNENWERTH, *Professor*
Ph.D. (1971), University of Missouri [1999]
WANDA RUSHING EDWARDS, *Assistant Professor*
Ph.D. (1998), University of Tennessee [2004]
GRAVES E. ENCK, *Associate Professor*
Ph.D. (1975), Yale University [2000]
JAMES D. PRESTON, *Professor*
Ph.D. (1967), Mississippi State University [2001]

1. The Department of Sociology and Social Work offers bachelor's degrees in both sociology and social work and the Master of Arts degree in Sociology.

I. M.A. Degree Program

Graduate students who select sociology as a major should consult with the graduate coordinator.

A. Program Admission

To be considered for admission, the Department of Sociology recommends that applicants have a Verbal score of 450 and a Quantitative score of 450 on the GRE or a score of 40 or higher on the MAT. Admission, however, is not automatic upon meeting the recommended scores. Other factors, such as, but not limited to, letters of reference, the writing sample, GPA for the last 60 hours of the undergraduate degree, and the availability of stipends, will be taken into account. Applicants with low test scores may be considered if other supporting evidence is outstanding. Additionally,

applicants must have satisfactorily completed courses in research methods, sociological theory, and statistics, or demonstrate equivalency.

B. Program Requirements

- Students may choose one of two degree programs: (A) the thesis program requires thirty (30) semester hours of graduate level work, which includes 3-6 hours of Sociology 7996 (Thesis); (B) the non-thesis program requires thirty-three (33) semester hours of graduate level work and the passing of both written and oral comprehensive examinations. The successful completion of the following courses is required of all majors: SOCI 6312, SOCI 7210, SOCI 7320. A minimum grade of "3.0" is required in each.
- For option (A), at least 24 semester hours of course work must be in sociology. For option (B), at least 27 semester hours must be in sociology.
- It is the responsibility of each student to become familiar with the graduate catalog and the requirements therein.

SOCIOLOGY (SOCI)

6211. Contemporary Sociological Theories. (3). Major frameworks of 20th century sociological thought, including theoretical schools of functionalism, exchange theory, critical theory, symbolic interactionism, phenomenological sociology, and ethnomethodology; current social and political trends and issues.

6312. Intermediate Social Statistics. (3). Multivariate analysis of social data. Use of computer programs for data management and statistical analysis. **PREREQUISITES:** SOCI 3311 and 3322, or their equivalent, or permission of the instructor.

6541. Sociology of Aging. (3). Ageism in sociocultural context; current beliefs, values, and norms regarding aging; structural location of aging in society, and implications of ageism in employment, poverty, private and institutional housing, crime, physical illness and mental illness.

6842. Sociology of Occupations and Professions. (3). Sociological analysis of the division of labor, occupational groupings, career patterns, and professional associations in modern American society.

6900-09. Special Topics In Sociology. (3). Topics are varied and announced in *Schedule of Classes*.

7120. Seminar In General Sociology. (3). General overview of the discipline. Sociological perspective, key sociological concepts and introduction to methods and theories employed in the field. (Recommended for students with limited undergraduate background in Sociology).

7122. Proseminar in Professional Development. (3). Introduction to sociological profession emphasizing career development; employment opportunities, computer resources, professional associations, submission and publication of articles. Faculty and student presentations. **PREREQUISITE:** Permission of graduate coordinator.

7210-8210. Theory Seminar. (3). An advanced analysis of recent developments in sociological theory, including the relationship of theory to empirical research.

7212-8212. Multi-Racial Feminist Theory. (3). Intensive analysis of major figures and issues in contemporary multi-racial feminist theory, emphasis on theory that grapples with conceptual and methodological requirements for multi-racial feminist politics of diversity which draws on both United States and international scholarship.

7320-8320. Seminar In Methods of Social Research. (3). Issues and techniques in data collection for the design and implementation of independent research projects; logic of conducting social scientific research ethical considerations, logic of sampling, various methods of collecting data for social research (e.g. experimental design, participant observation, survey research/questionnaire construction, and content analysis) and writing research proposal.

7322-8322. Seminar In Quantitative Data Analysis. (3). Preparation, analysis and interpretation of existing quantitative data; data processing, multivariate analysis, interpretation and writing results for research projects. **PREREQUISITE:** SOCI 6312, equivalent, or permission of instructor.

7325-8325. Seminar in Qualitative Research Methods. (3). Examination of qualitative social science research methods, particularly rationale behind these methods, how and when they are employed, and processes of analyzing field observations, oral histories and in-depth interviews.

7330-8330. Seminar in Current Research Literature. (3). A seminar dealing with current topics of interest in the field. Topics will vary in response to the interests of the students and specialties of the staff. (May be taken twice for three hours credit each time when topic varies.)

7410-8410. Sociology of Women. (3). Social definitions of gender and impact of these definitions on women's lives; women's responses to these conditions.

7411-8411. Social Stratification. (3). Theoretical analysis of how social class status and power shape social relations, determine life chances, and affect attitudes, opinions, and political choices of individuals and groups; processes that perpetuate systems of class, gender and race inequality, and degree of social mobility in societies.

7421-8421. Racial and Social Inequality. (3). (7810). Comparative study of racial, ethnic, and social minorities in the United States; historical and contemporary experiences of groups such as African Americans, Latinos, Asian Americans, Native Americans, homosexuals, and political minorities, as well as current theories in American sociology used to interpret their experiences; how gender and class influence experience of oppression.

7422-8422. Race, Class, and Gender. (3). Concepts, theories, and contemporary empirical research regarding multiple intersections of race, class, and gender; implications for sociological theory and methodology.

7442-8442. Sociology of Poverty. (3). Patterns of wealth and income inequality in contemporary society. Consequences of poverty for society and individuals in various institutional contexts. Critical evaluation of traditional theories of poverty and contemporary alternatives.

7450-8450. Seminar in Aging. Aging as sociological phenomenon through understanding and applying principles of gerontological analysis to contemporary topics in aging, including acquaintance with and use of computer accessible literature data base.

7511-8511. Theories of Deviance. (3). A seminar in the sociological approaches to the study of deviance and social disorganization with an emphasis on current sociological theory and research.

7512-8512. Deviance and Diversity. (3). Deviance and diversity from a sociological perspective; pornography, prostitution, gay and lesbian issues, various forms of sexual deviance, and other relevant and current topics.

7513-8513. Sociology of Gambling. (3). Sociological examination of role of gambling in contemporary society with special emphasis on social, economic, and political aspects of gambling behavior; agnostic vs. fatalistic gambling, gambling as social structure, gambling as superstition, gaming industry, illegal and sports gambling, legitimization of gambling, and problem gambling.

7528-8528. School, Family, and Delinquent Children. (3). Delinquency in context of children's relationships with family and school; theory of social bonding; changing social roles of children (through the life cycle and historically); family and delinquency; schools, truancy, and delinquency; endangered children; female delinquency; and treatment/ prevention/control of delinquency.

7631-8631. Urban Theory Seminar. (3). Competing theories and accompanying research findings on current issues in macro and micro urban theory; rise and fall of cities; effects of urbanism and urban form on individual and group behavior; how urban social groups (e.g., social classes, race/ethnic groups) manage their lives and their relations with others, and how these groups mobilize in efforts to change or resist change.

7655-8655. Sociological Foundations of Community Studies. (3). Ecological, interaction, and social system perspectives for community analysis; contemporary applications of theories within context of American society; implications of current changes for community life and social stratification, leadership and power structure, social differentiation and integration, community development, and ideology.

7711-8711. Seminar in Comparative Sociology. (3). How and why countries experience different social change trajectories; theories and research on social, cultural, political, and economic differences among countries and regions of the world; importance of global/ international processes in shaping these differences; class and state formation, revolution, emergence of democracy, effects of countries' roles in the world-system.

7721-8721. Seminar in Collective Behavior. (3). (6720). Emergence of collective behavior, spontaneous collectivities, social movements, social consequences of restrictive collective behavior.

7751-8751. Seminar in Sociological Social Psychology. (3). Advanced course in social psychology, incorporating basics and emphasizing sociological approaches; symbolic interaction, non-laboratory methods, attitude measurement, socialization, self-concept, gender, attraction, personal relationships, small groups, power, and situationalism.

7811-8811. Formal Organizations. (3). (7460). Competing theories of formal organizations and accompanying research findings on current issues of bureaucratization and centralization of modern social systems; close examination of power and functions of various large scale organizations, including economic, political, and educational institutions.

7820-8820. Seminar in Sociology of Education. (3). Schools and school life from sociological perspective; how societal objectives are translated into school policies and practices.

7830-8830. Seminar in the Family. (3). (7420). An advanced course in the study of the family which is primarily concerned with research findings in the area of family disorganization, changes in family structure and function, parent-child interaction, working mothers, and problems of aging.

7832-8832. Work and Family. (3). Current research on work and family and broader sociological relationship between social structure and personal life; link between home and market work, impact of employment, underemployment, and poverty on family life, and contemporary policy implications.

7851-8851. Medical Sociology. (3). Social meaning of disease, with special emphasis on the cultural, organizational, and behavioral contexts of the occurrence and management of disease.

7852-8852. Sociology of Mental Illness. (3). Social meaning of *mental illness*, with special emphasis on the cultural, organizational, and behavioral contexts of the occurrence and management of *mental illness*.

7853-8853. Women and Health. (3). Focus on American health care system and social/political economic factors affecting health of women of different racial/ethnic and economic groups.

7860-8860. Seminar in the Sociology of Religion. (3). A sociological examination of religious institutions, cultural and social factors associated with religious structure, religious values, religious behavior; secularization of culture and change of social structure; analysis of religious organizations, the religious leadership and religious movements.

7901-7909-8901-8909. Special Topics in Sociology. (1-3).

7912-8912. Directed Individual Study. (1-4). Individually directed advanced reading and/or research in special areas of interest. NOTE: Course may be repeated for a maximum of 6 hours credit. May be repeated. PREREQUISITE: Permission of Coordinator of Graduate Studies.

†7913. Teaching Skills for Graduate Assistants. (1-3). Overview and practical demonstrations of art of teaching sociology. PREREQUISITE: Limited to sociology majors; permission of graduate coordinator.

†7914. Workshop in Professional Development for Graduate Assistants. (1-3). Presentations of research methods and scholarly output by faculty, graduate students and visiting scholars. May be repeated. PREREQUISITE: Limited to sociology majors; permission of graduate coordinator.

†7915. Skills for Research and Proposal Preparation. (1-3). Research design, practice, and methodology in professional writing in sociology; specific emphasis on thesis/dissertation proposal preparation. May be repeated. PREREQUISITE: Limited to sociology majors; permission of graduate coordinator.

†7996. Thesis. (1-6). Supervised research in preparation for advanced degree thesis. PREREQUISITE: The formal filing of a research proposal and outline of procedures acceptable to the student's graduate committee.

†Grades of S, U, or IP will be given

The Fogelman College of Business and Economics

JAMES WETHERBE, Ph.D.,
Interim Dean

CRAIG LANGSTRAAT, LL.M., C.P.A.,
Interim Faculty Director of Ph.D. Programs
and Director of Ph.D. Studies

CRAIG LANGSTRAAT, LL.M., C.P.A.,
Associate Dean for Academic Programs

CAROL DANEHOWER, D.B.A.
Faculty Director of Masters Programs
and Director of Master's Studies

E-mail: FCBEGP@memphis.edu
<http://business.memphis.edu>

GRADUATE ACADEMIC PROGRAMS

Academic Area	Major	Concentration Within Major	Degree Offered
Accountancy	Accounting	(1) Accounting (2) Accounting Systems (3) Taxation	Master of Science (MS)
Economics	Economics		Master of Arts (MA)
Fogelman College of Business and Economics	Business Administration	(1) Finance, Insurance, and Real Estate (2) Management (3) Management Information Systems (4) Marketing (5) Real Estate Development	Master of Science (MS)
		(1) Accounting (2) Economics (3) Finance, Insurance, and Real Estate (4) Management (5) Management Information Systems (6) Management Science and Operations Management (7) Marketing (8) International Business (9) Executive (10) Law	Master of Business Administration (MBA)
		(1) Accounting (2) Economics (3) Finance (4) Management (5) Management Information Systems and Decision Sciences (6) Marketing	Doctor of Philosophy (Ph.D.)*

*Some concentrations may not admit students to the doctoral program every year. Interested applicants should contact area Ph.D. Coordinators before applying to the program.

Individual program requirements described in the Graduate School Issue of the 1999-2001 *Bulletin of The University of Memphis* are subject to change. Please consult the college office or the Office of the Graduate School for changes that may occur before publication of the next issue of this *Bulletin*; or consult the Graduate School website at: www.people.memphis.edu/~gradsch for annual catalog updates.

The Fogelman College of Business and Economics is one of the fastest growing centers of business study in the South. The University offers the business student advanced learning and a wealth of potential material for research and study. The University of Memphis maintains extensive facilities for business research, including the Bureau of Business and Economic Research, the Center for Manpower Studies, and the Public Sector Employee-Employer Relations Center, which aid Memphis area businesses and governmental agencies in many ways through the collection, analysis, and interpretation of business data.

Master of Business Administration, Master of Arts, and Master of Science Degrees

The *Master of Business Administration* degree is especially designed for students who have a bachelor's degree from arts and sciences, engineering, law or other areas of study, as well as those who hold a bachelor's degree in Business Administration. A foundation is provided for continued growth in any business endeavor or activity. Students in the MBA program may emphasize one of the following areas of study: accounting; economics; finance, insurance, and real estate; management; management information systems; management science and operations management; or marketing. Essential business and economics knowledge is conveyed by the coursework outlined below as Alternate Core I and Core II requirements for the MBA. The basic content of this coursework is also provided in the Executive MBA concentration but delivered in

a different format and setting designed for and limited to corporate executives. The International MBA concentration provides similar business and economic content, also delivered in a format and setting suitable for the IMBA student, and augments this with additional foreign language and area studies curricula. A joint MBA/JD concentration is also available. These are described in more detail below.

Students with adequate preparation in business administration and economics may complete the standard MBA program in a minimum of three semesters (one calendar year). Five semesters are normally required of students who have no undergraduate work in business. The graduate programs of the Fogelman College of Business and Economics are fully accredited by the American Assembly of Collegiate Schools of Business.

The *Master of Arts* and *Master of Science* degrees are available to students desiring a higher degree of specialization than is possible under the MBA program. Students may obtain the MS degree in Accounting with concentrations in taxation, accounting systems, or accounting, and in Business Administration with a concentration in finance, insurance, and real estate; management; management information systems; real estate development; or marketing. The Master of Arts degree is available with a major in Economics.

Master's Program Admission

Admission to the Master of Business Administration, Master of Arts (Economics), and Master of Science degree programs is granted to graduates of accredited colleges and universities who show high promise of success in graduate business study. Qualified candidates may enter the program at the beginning of any semester. The admission requirements include the following, all of which must be completed before admission and enrollment:

1. An undergraduate degree from an accredited college or institution
 2. An application for admission and the appropriate fee
 3. An official transcript from each college or university attended
 4. Satisfactory performance on undergraduate course work and a recent (five years or less) GMAT admissions examination score.
- Admission to the MBA and MS programs in The Fogelman College of Business and Economics is based on a thorough review of the applicant's academic and business credentials. Primary emphasis is placed on academic preparation

Arrangements for taking the GMAT can be made by writing to GMAT, Educational Testing Service, Princeton, New Jersey 08540, or by calling 1-800-462-8669. Packets are also available in the Graduate School Office at The University of Memphis, and in the Graduate Programs Office, room 101, Fogelman College of Business and Economics, The University of Memphis.

The Graduate Non-Degree classification allows individuals who have not yet decided to pursue a graduate degree to enroll in ALTERNATE CORE I graduate courses. In addition, Graduate Non-Degree students with professional development needs may enroll in other graduate courses (a maximum of 9 credit hours) with the permission of the Faculty Director of Master's Programs. To remain enrolled as a Graduate Non-Degree student, individuals must maintain a minimum GPA of 3.0.

Program Prerequisites (MBA and MS)

MBA and MS students must have completed or complete satisfactorily the proper background courses, including a quantitative course at the level of ECON 4810-6810.

If the prospective MBA student does not have an undergraduate degree in business, but meets the entrance requirements for the graduate school given above, the student will complete the required common body of knowledge back-

ground courses with 21 credits of the ALTERNATE CORE I, or their equivalent for the EMBA and IMBA concentrations. Prospective MBA students with undergraduate degrees in business are required to take only the Alternate Core I courses for which their background is deficient.

ALTERNATE CORE I	CREDITS
Financial Accounting (ACCT 7000)	3
Economic Theory (ECON 7010)	3
Statistical Methods in Business and Economics (ISDS 7020)	3
Management and Organization (MGMT 7030)	3
Financial and Legal Concepts of Business (FIR 7050)	3
Marketing Management (MKTG 7060)	3
Production and Operations Management (ISDS 7080)	3
TOTAL	21

Alternate Core I classes may not be used toward a graduate degree in the Fogelman College of Business and Economics.

MBA Program Requirements

Each candidate for an MBA degree must complete a minimum of 33 semester hours of course work beyond Alternate Core I prerequisites and pass an oral comprehensive examination. Students are expected to finish the first five required courses before beginning the area of concentration. Part-time MBA students should take at least two courses (a 6-hour load) each semester of enrollment. The 33 graduate credits comprising the MBA program (except Executive and International, see following sections) are distributed as follows:

CORE II	CREDITS
Required Courses	
Business Applications of Economic Theory (ECON 7100)	3
Managerial Accounting for Decision Making (ACCT 7110)*	3
Quantitative Methods for Business Decisions (ISDS 7120)	3
Seminar in Organizations (MGMT 7130)	3
Strategic Marketing (MKTG 7140)	3
Financial Management II (FIR 7150)	3
Seminar in Business Policy (MGMT 7160)**	3
And one 3-credit-hour course in international business selected from ACCT 7170***, ECON 7170, FIR 7170, ISDS 7170, MKTG 7170, MGMT 7170, ISDS 7650, or an international business course approved by the Faculty Director of Master's Programs.	3
CORE II TOTAL	24
<i>Electives or Concentration Requirements</i>	<i>9</i>
TOTAL	33

At least 27 of the 33 graduate credit hours required must be in courses designated for graduate students only (7000 level or above).

NOTES:

*Candidates who have completed ACCT 3310, Cost Accounting, or the equivalent must substitute ACCT 7320, Management Control Systems, or ACCT 7330, Cost Management Systems.

**To enroll in MGMT 7160, a student must have satisfactorily completed a minimum of 15 semester hours of Core II courses. Full-time students may be enrolled in MGMT 7160 and their fifth Core II course concurrently.

***MBA Students with a concentration in Accounting must take ACCT 7170.

Students pursuing a concentration in accounting or information systems must take additional prerequisite coursework before beginning CORE II. See area requirements.

Area Concentrations

Each area in the Fogelman College offers a concentration within the Business Administration major. The MBA may be

earned with a concentration in accounting; economics; finance, insurance, and real estate; management; management science and operations management; management information systems; and marketing. The Area Master's Coordinator will assist students with the specific courses required for a concentration in that area.

International MBA Concentration

The International Business concentration is a fixed track, two-year program designed for the full-time student interested in a career in international business. The curriculum offers: specific business courses with an international orientation, required graduate language and area studies course work, and an international business practicum or internship.

Applicants must have an undergraduate degree from an accredited college or university, with satisfactory performance on undergraduate course work and an acceptable GMAT score. In the foreign language area, applicants should be fluent in one of the program's foreign languages at the equivalent of junior level of college instruction. Applicants must have basic computer literacy and quantitative skills in calculus and statistics before entering the first semester curriculum. The University of Memphis offers courses in these areas that may be taken before enrollment.

To be considered for admission, applicants must provide: (1) an application for admission and the application fee, (2) an official transcript from each college or university attended, and (3) recent GMAT scores (five years or less).

The concentration schedule is as follows:

YEAR ONE	CREDITS
<i>Fall</i>	15
Global Accounting Policies	
Essentials of Economics for International Business	
Organizational Behavior and the International Context	
Global Financial Management	
Advanced Business Foreign Language	
<i>Spring</i>	12-15
Global Marketing	
International Competitiveness	
Managing Global Production Operations	
Global Information Systems	
Optional Elective in International Business	
Advanced Business Foreign Language II*	
<i>Summer</i>	11
Seminar in Regional Geography	
Seminar in Regional Politics	
Market Research Methodology	
Advanced Business Foreign Language III*	
YEAR TWO	
<i>Fall</i>	9
Practicum in International Business	
<i>Spring</i>	9-15
Seminar in International Business Policy	
Directed Electives in International Business	
Optional Electives in International Business	
TOTAL	56-65

Descriptions of French, German, and Spanish courses may be found in the Department of Foreign Languages and Literatures section of this *Bulletin*. Foreign national students have the option to choose English for their language and area studies coursework (for descriptions, see the Department of English section of this *Bulletin*).

Executive MBA Concentration

The Executive MBA concentration is for professional and management personnel who wish to broaden and enrich their business skills. The program consists of 45 credit-hours in a fixed-track format and is completed in two academic years. All participants take the same course of study and progress together through the program.

Applications are welcomed from professionals and managers who hold a bachelor's degree and who have five or more years experience in a professional or managerial position. Admission criteria include a review of (1) recent GMAT scores (five years or less), (2) undergraduate academic performance, and (3) quality of business experience.

The schedule of course work is listed below. Executive MBA concentration classes are designed for the modular structure of the program. All participants must attend a one-week residential seminar in August of both years. During the academic year, classes meet each weekend on alternate Fridays and Saturdays.

The 45 credit-hour program includes courses such as

- Management and Organization
- Marketing Management
- Financial Accounting
- Business Applications of Economic Theory
- Statistical Methods
- Financial Management
- Global Business
- International Business Seminar
- Seminar in Organizations
- Quantitative Methods
- Managerial Economics
- Business Policy
- Managerial Accounting

In addition, the program offers a number of 1.5 credit modules such as

- Advanced Financial Management
- Advanced Marketing Management
- Management Information Systems
- Business Ethics
- Business Legal Environment

Law Concentration

The MBA with a Law concentration allows the student to concurrently earn an MBA and a JD. The student must be admitted to both the Fogelman College MBA program and the JD program in the Cecil C. Humphreys School of Law. The Law concentration is composed of three law courses offered through the School of Law and approved by the associate dean for graduate programs in the Fogelman College.

MBA Without a Concentration

Students who do not choose a concentration will select nine hours of electives with the prior approval of the Faculty Director of Master's Programs in the Fogelman College.

MS in Business Administration

MSBA students must have completed a quantitative course at the level of ECON 4810-6810. Each concentration area may have additional prerequisites, which are identified in the area descriptions. Depending upon the student's undergraduate background, *additional prerequisites for some college core courses may be required*.

Students who wish to pursue the Master of Science with a major in Business Administration and a concentration in Real

Estate Development; Finance, Insurance, and Real Estate; Management; Management Information Systems; or Marketing must complete the following three core courses:

	CREDITS
Research Methodology (MKTG 7213)	3
Information Systems in Organizations (ISDS 7465)	3
One three-hour course in international business selected from ACCT 7170, ECON 7170, FIR 7170, ISDS 7170, MKTG 7170, or MGMT 7170, ISDS 7650, or an international business course approved by the Faculty Director of Master's Programs.	
TOTAL	9

For specific program requirements beyond the MS core, see the appropriate area listing.

MS in Accounting

Students who wish to pursue the Master of Science in Accounting must have successfully completed or complete the proper background courses. For program admissions, prerequisites, and degree requirements see the area listing.

MA in Economics

The Area of Economics offers a graduate program leading to the Master of Arts degree. For program admissions, prerequisites, and degree requirements see the area listing in this section.

Doctor of Business Administration

The mission of the Ph.D. in Business Administration program is to prepare individuals primarily for careers in teaching and research in institutions of higher education and secondarily for careers as consultants, researchers, and professional managers in other organizations.

Students with master's or professional degrees in business administration, public administration, economics, law, engineering, mathematics, computer science, psychology, sociology, and the physical sciences will find this background provides important preparation for entering the Ph.D. program.

The University has the academic resources to provide the doctoral applicant with a balanced education that provides both the qualitative and quantitative skills required of the modern business education professional.

The Ph.D. student at the Fogelman College can select a concentration from one of six areas of business administration: accounting, economics, finance, management, management information systems and decision sciences, and marketing.

The minor may also be selected from these fields or from fields as diverse as Psychology and Mathematics.

Program Admission

Individuals meeting the general requirements for admission to the Graduate School for doctoral-level programs shall be eligible to apply for admission to the Ph.D. program.

Admission to the Ph.D. program may be granted to qualifying applicants who show high promise of success in doctoral business study. The principal criterion for admission is evidence of superior achievement in prior academic work, coupled with outstanding promise for future contributions as a business scholar. The admissions committee of the concentration

area and the College Ph.D. Coordinator will review and evaluate each applicant. **Some concentration areas may not admit students to the doctoral program every year. Interested applicants should contact area Ph.D. Coordinators before applying to the program.**

Criteria used for evaluation include the applicant's:

1. Academic record: Applicant's graduate grade point average on the master's level coursework should be 3.4 or higher (on a 4.0 basis).
2. Testing: Applicants must present an acceptable score on a recent (five years or less) Graduate Management Admission Test. The Economics concentration also accepts the Graduate Record Examination (GRE).
3. Recommendations: Three letters of recommendation are required from former professors, colleagues, and/or business executives.
4. Personal Statement and Resume: Applicants must submit a written statement of career plans and objectives, and a current resume of academic and professional experiences.
5. Mathematics: Applicants must submit a transcript indicating the successful completion of a course in calculus.
6. Interview: Applicants may appear before the area admission committee for a personal interview.

Following admission, a student will be assigned to an area program committee composed of faculty members from the student's area of concentration. The program committee is responsible for planning and approving the program requirements, and for guiding and monitoring the progress of the student through the program.

Prerequisites

Students are usually admitted after completing a master's degree in business or economics. Prerequisites in the functional areas of business are determined by the area program committee of the student's area of concentration. A student who enters the Ph.D. program without a master's degree will initially be admitted at a master's level.

Program Content

Research Core: (at least 12 semester hours) includes courses designed to improve research skills. The courses in the Research Core will be designed by the student's area program committee.

Concentration and Minor: (at least 30 semester hours) may be selected from the following: Accountancy, Economics, Finance, Management, Management Information Systems and Decision Sciences, or Marketing. A minimum of 15 hours of 8000 level courses is required in the concentration. The minor (9 hours minimum) may be selected from the fields in the approved concentrations or from the several business-related specialties inside and outside the Fogelman College. A minor must be approved by the student's area program committee, the graduate program advisor of the area offering the minor, and the College Ph.D. Director. Courses graded on S, U, or IF may not be used to satisfy the minimum hours required for Research Core or Concentration and Minor.

Comprehensive Examinations: Each student will write comprehensive examinations in the concentration and in the minor field. Comprehensive examinations in either the concentration or minor may be taken as soon as all of the course work required for the Ph.D. degree has been successfully completed or the student is enrolled in the last single course of the program of study. After satisfactorily completing the written comprehensive examinations, each student must pass a general oral examination integrating all work. The student's program committee, with participation from the minor, will

organize and administer the oral examination. Comprehensive examinations are given each year in January and July.

Dissertation: (18 semester hours) requires major research of an original and creative nature and must meet the requirements of the Graduate School. The dissertation is the research capstone of the Ph.D. program and must be a significant contribution to the study of Business Administration. The student will register for dissertation credit hours every semester after passing the comprehensive examinations. After the dissertation is approved by the dissertation committee, the candidate will be given a final oral examination primarily dealing with the dissertation. The examination will be conducted by the dissertation committee. All members must be present at the examination. If the student's performance on this examination is satisfactory as judged by the committee, all requirements for the degree will have been completed.

Research Tool: Students are expected to acquire competence in using research tools and techniques beyond and above what is acquired with the Research Core. These tools and techniques may include statistical methods, computer programming, specialized research-related software, or proficiency in a relevant foreign language. Students must demonstrate competency in this area before taking comprehensive examinations. Area committees determine competency.

Residency:

A minimum of thirty (30) semester hours of doctoral course credits, exclusive of prerequisites, language, mathematical competency, and dissertation, must be completed at The University of Memphis. Students enrolled in the doctoral program also must meet the University residency requirements as defined in the Admissions and Regulations section of this catalog.

Financial Assistance

A number of doctoral and master's graduate assistantships are available to full-time students. Doctoral assistantships may be available to those students with a GMAT score of 600 or above. Graduate assistants provide part-time assistance to the concentration area in teaching and research. In 1997-98, compensation for doctoral students ranged from \$9,000 to \$12,000, for master's students from \$4,000 to \$5,000, in addition to a full tuition waiver. The Fogelman College also has a limited number of doctoral fellowships available.

Accountancy

CAROL DANEHOWER, D.B.A.
Faculty Director Master's Program
Room 101, Business Building
(901) 678-3721
vdanehwr@memphis.edu

CRAIG LANGSTRAAT, J.D., LL.M., C.P.A.
Interim Faculty Director Ph.D. Program,
Room 426, Business Building
(901) 678-5250
cjlngstr@memphis.edu

KEN LAMBERT, Ph.D.
Accountancy Master's Program Coordinator,
Room 219, Business Building
(901) 678-4569
klambert@memphis.edu

J. DAVID SPICELAND,
Accountancy Ph.D. Program Coordinator
Room 230, Business Building
(901) 678-2441
dspice@memphis.edu

MEMBERS

- SURENDRA P. AGRAWAL, *Professor*
Ph.D. (1973), University of Florida; C.P.A., F.C.A., C.M.A. [2001]
BARRY BRYAN, *Assistant Professor*
Ph.D. (1994), Texas A&M University [2005]
KENNETH R. LAMBERT, *Professor*
Ph.D. (1976), University of Arkansas [2001]
CRAIG LANGSTRAAT, *Professor*
LL.M. (1982), University of San Diego; C.P.A. [2001]
JAMES M. LUKAWITZ, *Associate Professor*
Ph.D. (1989), Florida State University [2003]
JOHN MALLOY, *Professor*
Ph.D. (1970), Louisiana State University; C.P.A. [2003]
PETER L. MCMICKLE, *Professor*
Ph.D. (1977), University of Alabama [2001]
J. DAVID SPICELAND, *Professor*
Ph.D. (1975), University of Arkansas; C.P.A. [1999]

ASSOCIATE MEMBERS

- LAWRENCE J. ABBOTT, *Assistant Professor*
Ph.D. (1998) University of Oregon [2005]
NICHOLAS FESSLER, *Assistant Professor*
Ph.D. (1998) Indiana University [2005]

I. Objectives

In the Area of Accountancy, qualified students may work toward the following degree programs: Ph.D. in Business Administration; Master of Science with a concentration in Accounting, Accounting Systems, or Taxation; or a Master of Business Administration with a concentration in Accounting.

II. General Admission and Prerequisite Requirements for Master's Programs

A. Program Admission

The Area offers two options leading to the MS degree in Accounting. It provides a 3/2 program and a 30 hour master's program. The 3/2 program is the recommended curriculum for students interested in a professional career in accounting. It is a 158-hour professional accounting program (PPA) that combines undergraduate and master's degrees. Undergraduate students can begin taking graduate coursework after they have completed 90 undergraduate credit hours providing they have (1) a minimum GPA of 3.25, (2) a minimum 450 GMAT score, and (3) an average minimum GPA of 3.25 in ACCT 3110, 3120, and 3310. Students in the 3/2 program can receive the bachelor's degree upon completion of the bachelor's content requirements. A student admitted under the PPA provision can take graduate courses only if he or she has completed the necessary course prerequisites. Graduate courses may not be double counted for both the bachelor's and master's degrees.

Students can also enter the 30-hour master's degree program after completing their bachelor's degree. Students applying to the 30-hour master's program must have a minimum GPA of 2.75 and 450 GMAT score for consideration.

B. General Prerequisites

- Students must have general education courses, which include the following: (1) English communication arts including writing, composition, and oral expression; (2) Behavioral sciences and humanities such as psychology, anthropology, and sociology; (3) Political and legal environment of business and society such as political science, public administration, and ethics; and (4) Mathematics including probability theory and statistics.
- Students must complete Alternate Core I prerequisites summarized at the beginning of the College section.
- Successful completion of the following accounting courses or their equivalents:
 - ACCT 3110, 3120, Intermediate Accounting I and II;
 - ACCT 3310, Cost Accounting;
 - ACCT 3510, Federal Income Tax I;
 - ACCT 4020, Accounting Systems;
 - ACCT 4240, Auditing

III. Master of Science Degree

The objective of the Master of Science degree with a major in Accounting is to offer students a balanced integrative approach to accounting education. In this interdisciplinary view, the interrelation of accounting to other areas of business is stressed. Thus, the accounting classes will synthesize accounting with the financing, marketing, operating, and production functions where applicable. The 30-hour master's program emphasizes business knowledge

for decision making with applications. Three concentrations within the major are offered: accounting, accounting systems, and taxation.

Each student must complete a minimum of 30 hours of graduate study. At least 12 hours must be in accounting 7000 level courses beyond ACCT 7000 and 7110.

A. Core requirement: ACCT 7210, Advanced Financial Reporting (3).

B. General Requirements: 15 hours selected in consultation with major adviser, including ACCT 6241, Advanced Auditing (3) or equivalent; and ACCT 6520, Federal Income Tax II (3) or equivalent; ENGL 7807, Workshop: Government and Corporate Writing, or ENGL 7808, Workshop: Scientific and Technical Writing, or MGMT 7173, Executive Communication; MKTG 7235, Special Topic: Professional Salesmanship, or other non-accounting elective as approved by the Accountancy Master's Coordinator.

C. Concentrations:

1. **Accounting:** ACCT 7320, Management Control Systems (3); ACCT 7420, Advanced Accounting Systems (3); and six hours selected from the following: ACCT 7241, Internal Auditing (3); ACCT 7120, Advanced Accounting Theory (3); ACCT 7310, Advanced Cost Accounting (3); ACCT 7330, Cost Management Systems (3); and other master's level accounting elective approved by the advisor.
2. **Taxation:** ACCT 7510, Tax Research and Theory (3); ACCT 7511, Federal Taxation of Partnerships and Partners (3); ACCT 7512, Federal Income Taxation of Corporations and Shareholders (3); ACCT 7514, Estate and Gift Taxation (3).
3. **Accounting Systems:** ACCT 7420, Advanced Accounting Systems (3); ACCT 7421, Multiuser Accounting (3); ACCT 7422, Accounting Systems Development (3); and a 3-hour related elective approved in advance by the coordinator of the concentration.

IV. Master of Business Administration with Concentration in Accounting

The objective of the Master of Business Administration program with a concentration in accounting is to provide students with basic conceptual knowledge of accounting and special insights into the nature, limitations, interpretations, and uses of financial information that serve as a foundation for accounting career development.

Requirements: ACCT 7120, Advanced Accounting Theory (3); ACCT 7320, Management Control Systems or 7330, Cost Management Systems (3); accounting electives (any 6 hours of ACCT 6241, 6520, and 7000 level accounting courses except ACCT 7000 or 7110); and ACCT 7170, International Accounting, (3).

V. Ph.D. Program

See the beginning of this college section for admission, prerequisites, and program requirements. Additional guidelines are outlined in the Ph.D. Student Handbook, which is available from the Director of Ph.D. Programs.

ACCOUNTANCY (ACCT)

6241. Advanced Auditing. (3). (0551). In-depth background in three technical areas of auditing: statistical plans, selection techniques, and statistical measurement. Analytical review techniques. EDP auditing.

6520. Federal Income Tax II. (3). Introduction to the federal income taxation of corporations, partnerships, estates, and trusts.

7000. Financial Accounting. (3). (7001). Accelerated and in-depth introduction to the conceptual foundations of accounting as a dynamic information system for measuring and communicating economic and financial data for planning and control purposes. Primarily for non-business students but is acceptable to remove accounting prerequisites for the MBA and MS programs.

7110. Managerial Accounting for Decision Making. (3). (7010). Managerial accounting analysis using cost/benefit analysis, capital budgeting, variable (direct) costing, product costing and pricing, variance analysis and other decision-making techniques as well as case studies and/or research projects. PREREQUISITE: ACCT 2020 or 7000, or consent of director. Not open to students with more than 12 hours in accounting.

7120. Advanced Accounting Theory. (3). Conceptual framework and theoretical aspects of accounting with emphasis on modern accounting trends; contemporary controversial topics in accounting; accounting research.

7130. Development of Accounting Thought. (3). (7710-8710). Readings of the outstanding writers from ancient times through the present.

7170. International Accounting. (3). International accounting problems, including accounting by multinational corporations, foreign currency translation, institutional structures, financial control and reporting for international operations, comparative analysis of accounting principles and auditing standards of various countries. PREREQUISITE: ACCT 7000 or equivalent.

7172. Global Accounting Policies. (3). Accelerated and in-depth introduction to conceptual foundations of financial and managerial accounting; selected tax topics. Restricted to students enrolled in IMBA concentration.

7190. Advanced International Accounting Policies. (3). International accounting issues in financial, managerial, tax, and auditing. PREREQUISITE: ACCT 7170.

7210. Advanced Financial Reporting. (3). Partnerships, statement of affairs, receiver's accounts, statement of realization and liquidation, business combinations and consolidated financial statements, fund accounting, international accounting. PREREQUISITE: ACCT 3120.

7241. Internal Auditing. (3). Authoritative internal audit standards, ethics of internal auditors, techniques of efficiency and effectiveness audits. PREREQUISITE: ACCT 4240.

7310. Advanced Cost Accounting (3). Budgets, determination of standards, variances and their functions, cost reports, profit projecting, direct costing, gross profit and breakeven analysis, cost-profit volume analysis, capital expenditure control, comparative cost analysis. PREREQUISITE: ACCT 3310.

7320. Management Control Systems. (3). Controllershship function; evolution of management accounting; conceptual framework of management accounting compared and contrasted with financial accounting; functional tools used by controllers; emphasis on research, written and oral communication skills in context of management accounting. PREREQUISITE: ACCT 3310.

7321. Management Advisory Services. (3). Consulting, services, tools, and techniques used in engagements; planning, preparing, and presenting proposals; managing projects; and utilizing advisor services skills. Ethical considerations included.

7330. Cost Management Systems. (3). Concepts and applications of cost management systems, including strategic planning and control, activity based costing and management, total quality control, product life-cycle cost, performance evaluation, target costing, just-in-time inventory system, and continuous improvement. PREREQUISITE: ACCT 3310.

7420. Advanced Accounting Systems. (3). Accounting systems analysis and design; emphasis on database information structures; advanced system analysis tools; integrating accounting and computer controls; use of state-of-the-art database package leading to development of working accounting model. On-site practicum. PREREQUISITES: ACCT 4020 and ISDS 2749.

7421. Multiuser Accounting Systems. (3). Environment of multiuser accounting; audit trail and internal control considerations in centralized versus distributed accounting systems; design considerations of computerized accounting subsystems, including accounts receivable accounts payable, payroll, and general ledger.

7422. Accounting System Development. (3). Development of working computerized accounting systems; overview of CASE Tools for accounting systems development; accounting file design, accounting user interface characteristics, accounting report generation considerations complete development and programming of working accounting subsystem modules by student teams. PREREQUISITE: ACCT 7421.

7510. Tax Research and Theory. (3). Advanced study of Federal taxation with emphasis on tax research methodology and various theoretical precepts; integration of basic tax knowledge with skillful tax research to accomplish desired ethical tax objectives. PREREQUISITE: ACCT 6520.

7511. Federal Income Taxation of Partnerships and Partners. (3). Tax law organization, operation, and liquidation of partnerships. General overview of Subchapter K, acquisitions of partnership interests, basis of partner's partnership interest, taxation of partnership operations transfers of partnership interests, partnership distributions, death or retirement of partner, adjustments to basis of partnership assets. PREREQUISITE: ACCT 7510 or permission of the instructor.

7512. Federal Income Taxation of Corporations and Shareholders. (3). Tax law: organization, operation and liquidation of corporations; Organization of corporation under Code Section 351 and related problems; corporation's capital structure; corporate income tax; corporate elections under Subchapter S; stock redemptions and partial liquidations; and corporate reorganizations and liquidations. PREREQUISITE: ACCT 7510 or permission of the instructor.

7513. Advanced Federal Taxation of Retirement Plans. (3). Emphasis on qualified pension, profit-sharing, and stock bonus plans; retirement plans for self-employed individuals; individual retirement accounts (IRAs); nonqualified deferred compensation plans; restricted property plans; stock options; tax planning considerations under the Employee Retirement Income Security Act of 1974 (ERISA). PREREQUISITES: ACCT 7510 or permission of the instructor.

7514. Estate and Gift Taxation. (3). Transfer taxes (gift tax, estate tax, generation-skipping transfer taxes; all taxes on transfer of property accumulated after imposition of income tax); federal gift and death taxes with emphasis on tax planning. PREREQUISITE: ACCT 7510 or permission of the instructor.

7515. Tax Administration, Practice, and Planning Considerations. (3). Introduction to overall organizational structure of Internal Revenue Service and operating procedures concerning individual rulings, additional issuances, the audit process, and its administrative powers. Rules governing tax practice including Treasury Department Circular 230. Strategies in seeking Administrative Rulings, the IRS audit, litigation considerations, penalties, statute of limitation of refund claims. PREREQUISITE: ACCT 7510 or permission of the instructor.

7518. Selected Topics in Taxation. (3). Special tax considerations of individuals, partnership, corporations, estates, trusts, exempt organizations and governmental entities. PREREQUISITE: ACCT 7510 or permission of the instructor.

7519. Advanced Federal Income Taxation of Corporations and Shareholders. (3). Concepts and principles related to federal income taxation of corporate reorganizations, corporate divisions, and taxation of affiliated corporations; tax consequences to corporate shareholder. Emphasis on code, regulations, court decisions, and research. PREREQUISITE: ACCT 7512.

7520. Federal Income Taxation of Trusts & Estates. (3). Tax law as it relates to Subchapter J; general overview of nature of trusts and estates during their existence and administration, taxable income of trusts and estates, taxation of beneficiaries, character of income, throwback rule, grantor trusts, tax planning considerations. PREREQUISITE: 7510 or permission of the instructor.

7820. EDP Auditing and Expert Systems. (3). Auditing of computer-based accounting systems. Emphasis on audit software and computer auditing techniques used to evaluate accounting system controls and test accounting data integrity; nature and use of expert systems in accounting with emphasis on their use as an audit tool.

7910. Problems in Accounting. (1-3). Directed independent reading and research projects in an area selected by the student with the approval of the supervising faculty member and Faculty Director. Proposed plan of study must be approved prior to enrollment. PREREQUISITE: Permission of the director.

7911. Accounting Internship. (1-6). Internship in business organization to gain on-the-job experience and to develop writing, organizational, and applied performance skills. Projects approved and supervised by area of Accountancy. Note: Credit not applicable to MS in Accounting. PREREQUISITE: Graduate standing and permission of College Internship Director.

7920-7929. Special Topics in Accountancy. (1-3). Varied topics. May be repeated with change in topic. PREREQUISITE: Permission of Faculty Director.

†7996. Thesis. (3-6). Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.

8000. Independent Accounting Research. (3). Research problem related to student's field of concentration under direction of a faculty member.

8610. Research Methods in Accounting. (3). Scientific method of research, different taxonomies and framework of research concepts; critiques of accounting research articles; formulation and execution of researchable topic that synthesizes knowledge gained through study of research topics.

8621. Seminar in Empirical Economic Accounting Research. (3). Scientific philosophy and method of empirical research that tests economic theories of accounting.

8710. Financial Accounting Research. (3). (8920). In-depth study of existing body of literature in various areas of empirical accounting research. Emphasis on research design and methodology. Design and development of individual research projects.

8720. Seminar In Accounting Research and Human Information Processing. (3). (8210). Current research on decision making and judgement behavior in accounting; theories, models, and empirical evidence about how accountants make professional judgements; selected readings from relevant source fields. Alternative methods for conducting empirical research.

8730. Managerial and Behavioral Accounting Theory and Research. (3). (8310). Theoretical framework of managerial and behavioral accounting related to decision-making processes of management. Influence of behavioral science on budgeting techniques and managerial information and control systems. Behavioral accounting research.

8731. Seminar in Management Accounting. (3). Background for management accounting research; quantitative aspects of management accounting; analytical and communication skills in decision making; mathematical modeling research in management accounting; alternative conceptual approaches to development of models to explain existence of observed management accounting techniques. PREREQUISITES: ACCT 7320 or equivalent and admission to doctoral program.

8740. Capstone Research Seminar in Accounting. (3). Review, analysis, and integration of scholarly research in accounting; development of critical thinking and communication skills for designing, executing, and evaluating scholarly accounting research. PREREQUISITES: Intended for doctoral students in final year.

†Grades of S, U, or IP will be given.

Business Administration

The courses listed below are designated with "BA" numbers in order that they may be available to advanced graduate students with a major in the Fogelman College of Business and Economics. They may be accepted toward the completion of the degree requirements.

BUSINESS ADMINISTRATION (BA)

7105-8105. Contemporary Electronic Commerce (3). (Same as COMP 7105-8105). Technical and managerial foundations of electronic commerce, including electronic infrastructure, data transfer, mining and warehousing, security; one-to-one marketing; impact of electronic commerce on resource planning, project development, organization and management of the business environment; new forms of the virtual enterprise. PREREQUISITES: ISDS 7190, COMP 7100, or permission of the instructor.

7110-8110. Advanced Electronic Commerce (3). (Same as COMP 7110-8110). Advanced concepts and strategies for EC, including implementation platforms, multimedia integration, human-computer interaction, and ethical issues; impact of EC as a force in technology advances, consumer behavior, and changing the nature of the business world. PREREQUISITES: BA 7105, COMP 7105, or permission of the instructor.

7700-30. Special Topics in Business Administration. (1-6). Special study of problems in business and economics. Topic areas change each semester as determined by new developments in business. PREREQUISITE: Permission of associate dean for academic programs.

7800. Internship in Business. (1-6). Internship in business organization to gain on-the-job experience in actual management environment; project to be approved by College Internship Director and supervised by graduate faculty. PREREQUISITES: 15 semester hours of graduate credit and minimum GPA 3.25.

†7900-8900. Research Practicum in Business for Graduate Students. (1-6). Practical demonstration of and experience in the design, practice, and methodology of research in business. May be repeated.

†7901-8901. Teaching Practicum in Business for Graduate Students. (1-6). Practical demonstration of and experience in the art of teaching business topics. May be required of Ph.D. students.

†7902-8902. Workshop in Business for Graduate Students. (1-6). Presentations of research methods and scholarly work by faculty, graduate students, and visiting scholars in business.

7910. Problems in International Business. (1-6). Directed independent or group study and research in international business area. Study projects may be designed by student(s) with approval of supervising faculty member. **PREREQUISITE:** Permission of associate dean for academic programs.

7950. Practicum in International Business. (3-9). Practicum in foreign business or academic organization to gain management skills and experience; work experience in non-English speaking country; enrollment must be approved by the Associate Dean for Academic Programs. **PREREQUISITE:** 12 hours of graduate business courses.

7970-8970. Electronic Commerce Project. (3). (Same as COMP 7970-8970). Research in an electronic commerce project under the supervision of a faculty member and possibly a liaison from commerce or industry. **PREREQUISITES:** BA 7110, COMP 7110 or permission of the instructor.

†8800. Reading for Comprehensives (1-12). Directed readings as preparation for comprehensive examinations. Arranged on an individual basis; limited to Ph.D. students in Business Administration. May be repeated. **PREREQUISITE:** Students must have completed or be in the last semester of required course work and have permission of the College Ph.D. coordinator.

8920. Dissertation Seminar. (1-3). Research design and methodology in administrative sciences. Guides student in preparing dissertation proposal. Students present progress reports to other seminar members to critique the progress of fellow students and acquire skills and knowledge in research design and methodologies. To be taken during the last 12 hours of doctoral coursework.

†9000. Dissertation (1-12). Independent research for Doctor of Business Administration degree. **PREREQUISITE:** Successful completion of comprehensive exams or permission of Director of Ph.D. Programs.

†Grades of S, U, or IP will be given.

Decision Sciences

CAROL DANEHOWER, D.B.A.
Faculty Director Master's Program
Room 101, Business Building
(901) 678-3721
vdanehwr@memphis.edu

CRAIG LANGSTRAAT, J.D., LL.M., C.P.A.
Interim Faculty Director Ph.D. Program,
Room 426, Fogelman College of Business & Economics
(901) 678-5250
cjlngstr@memphis.edu

SATISH MEHRA, PhD
Decision Sciences Master's/PhD Coordinator
Room 246 Business Building
(901) 678-2476
smehra@memphis.edu

MEMBERS

MOHAMMAD AMINI, Professor
Ph.D. (1989), Southern Methodist University [2000]
SATISH MEHRA, Professor
Ph.D. (1978), University of Georgia, CPIM (1980) [1999]
ERNEST L. NICHOLS, Associate Professor
Ph.D. (1993), Michigan State University [2003]
DONNA RETZLAFF-ROBERTS, Associate Professor
Ph.D. (1990), University of Cincinnati [2003]
MICHAEL VINEYARD, Associate Professor
Ph.D. (1990), University of Cincinnati [2000]

I. In the area of Decision Sciences qualified students may work toward a Master of Business Administration degree with a concentration in Management Science and Operations Management and the Ph.D. in Business Administration with a concentration in Management Information Systems and Decision Sciences. The area offers courses in production operations management and quantitative methods.

II. MBA Program

See beginning of this College section for admission, prerequisite, and program requirements. Management Science and Operations Management concentration students should take their three electives from ISDS courses as approved by the Decision Sciences area master's coordinator.

III. Ph.D. Program

See the beginning of this College section for admission, prerequisite, and program requirements. Additional guidelines defined by the area are available from the Ph.D. program coordinator.

DECISION SCIENCES (ISDS)

7020. Statistical Methods in Business and Economics. (3). Statistical concepts and methodology useful in understanding, assessing, and controlling operations of business and economic society. **PREREQUISITE:** ECON 6810 or equivalent.

7080. Principles of Production and Operations Management. (3). Role of P/OM function and relationship to other functional areas; basic production techniques and tools for both manufacturing and service operations. **PREREQUISITE:** ISDS 3711 or 7020.

7120. Quantitative Methods for Business Decisions. (3). Applications of management science models for managerial control and research; concepts and techniques of research design integrated with linear programming, inventory, network, and simulation models; computer solutions and managerial interpretation with regard to management science models, statistical techniques, and information systems concepts. **PREREQUISITES:** ISDS 7020 or equivalent.

7170. International Production Operations Management. (3). Tools and techniques to capture the opportunities of world markets for enhancing competitiveness of a business through higher productivity and quality in a time-based mode of operations; effective resource utilization and reliable supply-chain strategies emphasized. Focus on creating and managing global suppliers and global customers. **PREREQUISITE:** ISDS 7080 or permission of instructor.

7310-8310. Seminar in Production and Operations Management. (3). Problems and issues encountered in productions and operation: management environment; master planning, capacity management resources planning, and shop floor management; managerial decision-making process for improving productivity and better utilization of scarce resources; implementation problems and solutions; manufacturing and service operations. **PREREQUISITE:** ISDS 3510 or equivalent or permission of instructor.

7311-8311. Seminar in Materials Planning and Management. (3). Traditional and modern theories and techniques of materials management; organization for effective materials management systems; requirements planning and resources planning; design and implementation; consideration, role of top management in materials planning and management; functional interface problems and database integrity. **PREREQUISITE:** ISDS 3510 or equivalent or permission of instructor.

7312-8312. Seminar in Manufacturing Resources Planning. (3). Multifunctional analysis of problems and issues encountered during planning of resources in manufacturing and service operations; emphasis on role of computer and automation in control of scheduling cash flows, labor capacity planning, inventory, distribution, and resource requirements; systems-based. **PREREQUISITE:** ISDS 3510 or equivalent or permission of instructor.

7313-8313. Managing Global Production Operations. (3). Technical and business factors affecting global operations; emphasis on operation systems management, methods for decision making and ongoing challenges necessary to meet the needs of dynamic world marketplace. **PREREQUISITE:** ISDS 3510 or permission of instructor.

7425-8425. Deterministic Models for Management Science. (3). Deterministic models concerned with optimal allocation of limited resources among competing activities; business applications of linear programming including duality and post-optimality analysis as well as branch-and-bound and network flow methods of integer linear programming. **PREREQUISITE:** ISDS 7120 or equivalent.

7430-8430. Advanced Quantitative Topics for Business Decisions. (3). Advanced study of management decision-making using various quantitative methods of analysis; specialized applications of specific foundation courses in management science. PREREQUISITES: ISDS 7120 and ECON 6810 or equivalent.

7431-8431. Applied Modeling for Business Decisions. (3). The application of management science modeling across business disciplines through readings, case studies, and projects; computer modeling languages utilized. PREREQUISITES: ISDS 7120 and ECON 6810 or equivalent.

7450-8450. Simulation and Analysis of Business Systems. (3). Methods and techniques utilizing data processing, statistics, probability and operations research; applications include inventory systems, production, scheduling, and waiting-line problems; includes construction of computer simulation model, model validation, analysis of results, and various simulation languages, such as GPSS and SIMSCRIPT. PREREQUISITES: ISDS 7120 and ECON 6810 or equivalent.

7921-8921. Seminar in Decision Sciences Research. (3). Some statistical techniques available to business researcher. Topics may include: contingency tables, bivariate correlation analysis, regression analysis, ANOVA, discriminant analysis, and factor analysis. Use of computerized statistical packages and interpretation of results of packages. PREREQUISITE: ISDS 2711 or 7020 or equivalent.

8530. Survey of Statistical Techniques in Business Research. (3). Introduction to statistical methods pertinent to business research; hypotheses testing procedures, association analyses, regression and forecasting techniques, and nonparametric methods; intensive research orientation and use of statistical software; critical review of current usage of various research and data analysis techniques. PREREQUISITE: ISDS 7020 or equivalent and working knowledge of SPSS.

8540. Multivariate Analysis for Business Research. (3). Multivariate techniques available to the business researcher. Use of computerized statistical packages and their interpretation. PREREQUISITE: ISDS 8530 or equivalent.

Economics

CAROL DANEHOWER, D.B.A.
Faculty Director Master's Program
Room 101, Business Building
(901) 678-3721
vdanehwr@memphis.edu

CRAIG LANGSTRAAT, J.D., LL.M., C.P.A.
Interim Faculty Director Ph.D. Program,
Room 426, Business Building
(901) 678-5250
cjlngstr@memphis.edu

PINAKI BOSE, Ph.D.,
Economics Master's Program Coordinator:
Room 427, Business Building
(901) 678-5528
psbose@memphis.edu

WILLIAM T. SMITH, Ph.D.,
Economics Ph.D. Program Coordinator:
Room 411, Business Building
(901) 678-3675
wtsmith@memphis.edu

MEMBERS

- PINAKI BOSE, Assistant Professor
Ph.D. (1990), State University of New York, Buffalo [2001]
YRIL F. CHANG, Professor
Ph.D. (1979), University of Virginia [2001]
COLDWELL DANIEL, III, Professor
Ph.D. (1958), University of Virginia [2001]
THOMAS O. DEPPERSCHMIDT, Professor
Ph.D. (1965), University of Texas at Austin [2003]

- RICHARD D. EVANS, Professor
Ph.D. (1974), University of Missouri [2001]
KWOK-KWAN FUNG, Professor
Ph.D. (1970), Harvard University [2001]
JOHN E. GNUSCHKE, Professor; Director, Bureau of Business and Economic Research
Ph.D. (1975), University of Missouri [2001]
MICHAEL J. GOOTZEIT, Professor
Ph.D. (1966), Purdue University [2001]
JULIA A. HEATH, Professor
Ph.D. (1986), University of South Carolina [2001]
DAVID M. KEMME, Professor; Morris Chair
Ph.D. (1980), Ohio State University [2001]
ALBERT A. OKUNADE, Professor
Ph.D. (1986), University of Arkansas [2003]
ROSE M. RUBIN, Professor
Ph.D. (1968), Kansas State University [2001]
WILLIAM T. SMITH, Associate Professor
Ph.D. (1987), University of Virginia [2003]
SHELLEY WHITE-MEANS, Professor
Ph.D. (1983), Northwestern University [2001]

ASSOCIATE MEMBERS

- DAVID H. CISCHEL, Professor; Senior Economic Researcher, Bureau of Business and Economic Research
Ph.D. (1971), University of Houston [2001]
V. LANE RAWLINS, Professor; President, The University of Memphis
Ph.D. (1969), University of California-Berkeley [2003]
JOHN J. REID, Associate Professor
Ph.D. (1962), University of Virginia [1999]

ADJUNCT MEMBER

- DONALD R. WELLS
Ph.D. (1965), University of Southern California [2001]

- I. In the area of Economics, qualified students may work toward the MA degree with a major in Economics, the MBA degree with a concentration in Economics, or the Ph.D. degree in Business Administration with a concentration in Economics.

II. M.A. Degree Program

A. Program Admission:

1. Satisfactory performance on the Graduate Record Examination (Satisfactory performance on the Graduate Management Admission Test may be acceptable with approval of the Faculty Director of Masters Programs.)
2. Satisfactory undergraduate grade point average.

B. Program Prerequisites:

Students should have successfully completed or complete ECON 3310, Microeconomic Theory; ECON 3320, Macroeconomic Theory; ISDS 2710 and 3711, Business Statistics I and II (ISDS 7020 is an acceptable substitute for ISDS 2710 and 3711); ECON 6810 or equivalent.

C. Program Requirements:

Each candidate has the choice of taking a written, comprehensive examination or writing a thesis at the end of course work. Regardless of which option is chosen, 9 hours of the student's course work must be devoted to the following: ECON 7300, ECON 7310, and ECON 7320.

1. Examination Option:

- a. Each candidate must complete a minimum of 33 semester hours of graduate course work, exclusive of MA program prerequisite courses and MBA Alternate Core I courses.
- b. The 33 hours must include a minimum of 21 hours of approved course work in Economics. The remaining 12 hours, with approval of the department graduate adviser, may be taken in collateral courses.
- c. At least 24 hours must be in courses designated for graduate students (7000 level or above).
- d. Each candidate must pass a written examination in microeconomic theory and macroeconomic theory. A maximum of two attempts within a year of the first attempt is permitted.

2. Thesis Option:

- a. Each candidate must complete a minimum of 30 semester hours of graduate course work, exclusive of MA program prerequisite courses, MBA Alternate Core I courses, and Thesis Hours.
- b. The 30 hours must include a minimum of 18 hours of approved course work in Economics. The remaining 12 hours, with approval of the department graduate adviser, may be taken in collateral courses.
- c. At least 21 hours must be in courses designated for graduate students (7000 level or above).

- d. Each student will register for at least 3 hours (and not more than 6 hours), write and defend a thesis under the guidance of a faculty committee. A student who fails to complete the thesis after having registered for the maximum degree credit allowable must register for thesis credit each academic semester until the thesis is completed.

III. MBA Program

See the beginning of this College section for admission, prerequisites and program requirements. Nine hours of economics courses above the level of ECON 7100 approved by the Economics Master's Coordinator comprise the concentration.

IV. Ph.D. Program

The objective of the Ph.D. in Business Administration with a concentration in Economics is to prepare candidates for a successful academic or professional career in economics and business. Through an intensive, advanced level training in both economic theory and quantitative methods, students learn to conduct independent research and prepare for various responsibilities of a professional career. The Economics area has an outstanding faculty with a strong orientation in applied as well as theoretical research. For admission, program content, and financial aid information, see the beginning of this College section, or contact the Economics Ph.D. Program Coordinator

ECONOMICS (ECON)

6130. Government Regulation of Business. (3). The several approaches to legal and legislative control of business—especially tax laws, commission regulation, and anti-monopoly legislation—are considered in view of the impact of each on industrial operating policy and corporate social responsibility.

6810. Quantitative Economic Analysis. (3). Introduction to the application of mathematical tools in business and economics; review of matrix algebra, differential and integral calculus; optimization with and without constraints; comparative statistics.

7010. Economic Theory. (3). Investigation of microeconomic and macroeconomic theory. Topics include: supply and demand, production and cost, competition and monopoly, income determination, unemployment, inflation, and government budget. PREREQUISITE: Fewer than six hours of undergraduate economics or permission of instructor.

7100. Business Applications of Economic Theory. (3). (7020). Application of economic concepts to business enterprise. Emphasis on demand and supply analysis, efficient production and cost control, pricing and output decisions under alternative market types, income and employment determination, and impact of inflation and government on business firm. PREREQUISITE: ECON 7010 or equivalent or permission of instructor.

7101. Essentials of Economics for International Business. (3). Essential economic theory and applications to international business; application of economic concepts such as the market model, consumption and production theory, income and employment determination in an international environment; elementary international economics for business management. PREREQUISITES: Admission to IMBA concentration or permission of instructor.

7110-8110. Managerial Economics. (3). Economic rationale underlying key management decisions; managerial problems identified and examined in light of relevant economic concepts; remedial action plotted on basis of economic logic. PREREQUISITE: ECON 7100 or 7300 or equivalent or permission of instructor.

7120-8120. Advanced Quantitative Economic Analysis. (3). Advanced mathematical methods used in economics, finance, accounting, and management science with specific applications to micro- and macroeconomics; topics include constrained, unconstrained, and dynamic optimization, comparative statistics, and optimal control. PREREQUISITES: ECON 6810 or permission of instructor.

7125-8125. Business and Economic Research. (3). Fundamental application of statistical inference, research software, data sets, and econometrics. PREREQUISITES: ISDS 7020 and MATH 1312.

7126-8126. Economic Forecasting. (3). Statistical models for forecasting and measuring risk, growth, cyclical and seasonal patterns in business and economic time series. PREREQUISITE: ECON 7100 or permission of instructor.

7130-8130. Industrial Organization. (3). How different types of markets work; nature of the firm; monopoly; monopolistic competition and product differentiation; oligopoly; repeated games and tacit col-

lusion; entry, accommodation, and exit. PREREQUISITE: ECON 7310-8310 or permission of instructor.

7170. International Trade and Investments. (3). Introductory survey of trade theory and international macroeconomics; traditional issues of international trade theory, including why countries trade, distributional effects, policies; basic concepts and issues in international macroeconomics, including balance of payments and international capital flows, exchange rates; effects of macroeconomic policies under alternative exchange rate regimes. PREREQUISITE: ECON 7010 or permission of instructor.

7172-8172. International Competitiveness in the World Economy. (3). Meaning and measurement of international competitiveness; microeconomic and macroeconomic aspects; government policy implications; strategic intervention. PREREQUISITE: ECON 4350 or 7170 or permission of instructor.

7175-8175. International Trade Theory and Policy. (3). Advanced treatment of the theory of international trade; the theory of comparative advantage, the Heckscher-Ohlin model, specific factors, returns to scale and product life-cycle hypotheses; applications of tariffs and commercial policies, international factor movements, and selected topics in international economic development. PREREQUISITE: ECON 7310-8310 or permission of instructor.

7176-8176. International Monetary Theory and Policy. (3). Advanced treatment of open economy macroeconomics: determination of internal and external balance; balance of payments accounting; models of balance of payments adjustment, foreign exchange rate determination and international capital flows; stabilization mechanisms and policies. PREREQUISITE: ECON 7320-8320 or permission of instructor.

7210-8210. Labor Economics. (3). Use of theory and statistical techniques to analyze determination of wage rates and employment and working conditions in labor markets under conditions of competition and collective bargaining. PREREQUISITE: ECON 7100 or 7300 or permission of instructor.

7260-8260. Environmental Economic Policy. (3). Effectiveness of regulation, prohibition, zoning, subsidies, and effluent charges as methods of mitigating environmental decay. PREREQUISITE: ECON 7100 or 7300 or permission of instructor.

7300. Economic Theory and Decisions. (3). Basic exposition of decision making theories of consumers and firms under different market structures and informational settings. PREREQUISITES: ECON 6810 and 7010 or equivalents of both.

7310-8310. Advanced Microeconomics I. (3). Economic models of consumers, firms, and markets; basic theories of the firm and consumer; choice under uncertainty; market structure and traditional models of imperfect competition. PREREQUISITE: ECON 3310 and 3320, or ECON 7300, or permission of instructor.

7312-8312. Economic Behavior and Organizations. (3). Models of real-world economic behavior and institutions; analysis of nature of modern corporation as an economic organization; focus on roles played by incomplete information, transactions costs, legal structure and evolution of differences in capabilities in shaping hierarchies, contractual arrangements, and other aspects of organizational relationships. PREREQUISITE: ECON 7300.

7313-8313. Economics of Risk and Uncertainty. (3). Economics of risk and information: individual choice under uncertainty; mean-variance models and their relation to expected utility; stochastic dominance; applications to insurance, asset demands, capital budgeting, etc.; market equilibrium and information; adverse selection and signaling; moral hazard and incentives. PREREQUISITE: ECON 7310-8310 or permission of instructor.

7320-8320. Advanced Macroeconomics I. (3). Microeconomic foundations of macroeconomic models; comparison and contrast of macroeconomic models, neoclassical and Keynesian, new neoclassical and neo-Keynesian. PREREQUISITE: ECON 3310 and 3320, or ECON 7300, or permission of instructor.

7322-8322. Monetary Theory and Policy. (3). Role of money in the macroeconomy: includes theory of financial structure, money creation and monetary control, theory of money demand; general equilibrium financial models: static analysis, short-run dynamics, monetary growth; rules versus discretion debate: optimal monetary policy historical conduct of monetary policy. PREREQUISITE: ECON 3320 7300, or 7320-8320, or permission of instructor.

7330-8330. History of Economic Thought. (3). In-depth analysis of great thinkers in development of economic theory and policy: Adam Smith, David Ricardo, John Stuart Mill, Karl Marx, Alfred Marshall, John Maynard Keynes, and selected contemporary economists. PREREQUISITE: ECON 7100 or equivalent, or permission of instructor.

7501-8501. Urban and Regional Economics. (3). Analysis of spatial aspects of economic theory and particular problems of urban and regional economies. Topics include location theory, regional growth and trade patterns and economics of housing and poverty. PREREQUISITE: ECON 7100 or 7300, or permission of instructor.

7700-8700. Economics of Electronic Commerce. (3). Market characteristics of electronic commerce, economic impact of electronic commerce on terrestrial commerce; broader issues of property rights, government regulation, information infrastructure maintenance, and business cycles. PREREQUISITE: ECON 7010 or equivalent.

7710-8710. Health Care Economics. (3). Unique nature of health care as an economic good; health care market and its participants, including patients, physicians, and hospitals; financing and delivery of personal health care in the United States and other countries.

7711-8711. Applications of Health Care Economics. (3). Analysis of health care expenditures, employee health plans, and third party reimbursement mechanisms; economics of insurance design in presence of moral hazard and adverse selection; business and union strategies for health care; local, state, and national health care reform. PREREQUISITE: ECON 7710 or permission of instructor.

7712-8712. Pharmaceutical Economics. (3). Methodology and case studies of pharmaceutical economics and quality of life aspects of medicinal intervention; emphasis on comparative pharmaceutical care systems and payment mechanisms of developed and developing countries. PREREQUISITE: ECON 7710 or permission of instructor.

7720-8720. Economics of the Public Sector. (3). Emphasis on the production of public goods, financing of public goods, problems created by a federal fiscal system; current problems and policy decisions. Public finance theory and policy will be analyzed.

7730-8730. Economics of Not-for-Profit Organizations. (3). Origins, logic, and growth of not-for-profit organizations; entrepreneurship in this setting; rationale for exempting organizations from taxation; unfair competition; roles in market economies. PREREQUISITE: ECON 7100 or permission of instructor.

7810-8810. Econometrics I. (3). Classical multivariate regression analysis and statistical inference under ideal and non-ideal conditions; theoretical foundations with emphasis on empirical implementation; estimation of models with categorical data, non-linearity, simple dynamics, or panel data. PREREQUISITE: ECON 7125-8125 or permission of instructor.

7811-8811. Econometrics II. (3). Continuation of ECON 7810-8810. Estimation and statistical inference in simultaneous equations models and models with discrete or limited dependent variables; seemingly unrelated regressions, unobservable variables, identification and estimation in a simultaneous system, binomial and multinomial choice, truncated or censored data, and sample selectivity. PREREQUISITE: ECON 7810-8810 or permission of instructor.

†7900-8900. Research Practicum in Economics for Graduate Students. (1-6). Practical demonstrations of and experience in the design, practice, and methodology of research in the field of economics. Required of all Ph.D. students and recommended for all graduate assistants. May be repeated.

†7901-8901. Teaching Practicum in Economics for Graduate Students. (1-6). Practical demonstrations of and experience in the art of teaching economics topics. Required of all Ph.D. students and recommended for all graduate assistants. May be repeated.

†7902-8902. Workshop in Economics for Graduate Students. (1-3). Presentations of research methods and scholarly work by faculty, graduate students, and visiting scholars in economics. Required of all Ph.D. students and recommended for all graduate assistants. May be repeated.

†910-8910. Problems In Economics. (1-6). Directed independent reading and research in an area selected by the student with the approval of the supervising faculty member and Faculty Director. Proposed plan of study must be approved prior to enrollment.

7940-49-8940-49. Special Topics In Economics. (1-3). Special areas of economics not otherwise included in the curriculum. Consult *Schedule of Classes*.

†7996. Thesis. (3-6). Application for writing a thesis must be filled out on an approved form after consultation with the major professor, and filed with the Dean of the Graduate School. Independent research for the master's degree.

8311. Advanced Microeconomics II. (3). Continuation of ECON 7310-8310. Advanced development of theories of the consumer and firm; general equilibrium analysis and welfare economics; game theory, with applications to imperfect competition. PREREQUISITE: ECON 7310-8310 or permission of instructor.

8321. Advanced Macroeconomics II. (3). Seminar focusing on recent advances in macroeconomic theory; topics may include rational expectations and the policy effectiveness debate; economic dynamics and growth theory; asset-pricing models; neo-Keynesian models with imperfect competition and coordination failure. PREREQUISITE: ECON 7320-8320 or permission of instructor.

†Grades of S, U, or IP will be given.

Finance

CAROL DANEHOWER, D.B.A.
Faculty Director Master's Programs
Room 101, Business Building
(901) 678-3721
vdanehwr@memphis.edu

CRAIG LANGSTRAAT, J.D., LL.M., C.P.A.
Interim Faculty Director Ph.D. Program
Room 426, Business Building
(901) 678-5250
cjlngstr@memphis.edu

L. S. SCRUGGS, Ph.D.
Finance Master's Program Coordinator
Room 448, Business Building
(901) 678-3567
lscruggs@memphis.edu

KEE H. CHUNG, Ph.D.
Finance Ph.D. Program Coordinator
Room 446, Business Building
(901) 678-4642
keechung@memphis.edu

MEMBERS

QUENTIN CHU, *Professor*
Ph.D. (1984), The University of Illinois [2001]
KEE H. CHUNG, *Professor*
Ph.D. (1986), University of Cincinnati [2003]
THOMAS McINISH, *Wunderlich Chair*
Ph.D. (1978), University of Pittsburgh [2003]
STEPHEN W. PRUITT, *Professor*
Ph.D. (1987), Florida State University [2000]
C. S. PYUN, *Professor*
Ph.D. (1966), University of Georgia [2001]
ROBERT A. WOOD, *Professor*
Ph.D. (1978), University of Pittsburgh [2003]

ASSOCIATE MEMBERS

M.E. BOND, *Professor*
Ph.D. (1967), University of Iowa [2001]
L. S. SCRUGGS, *Associate Professor*
Ph.D. (1974), Vanderbilt University [2001]

I. The Area of Finance offers the Master of Science degree with a major in Business Administration and a concentration in Finance, Insurance, and Real Estate; the Master of Business Administration with a major in Business Administration and a concentration in Finance, Insurance, and Real Estate; and the Ph.D. in Business Administration with a concentration in Finance.

II. MSBA Program

See the beginning of this College section for admission, prerequisite, and program requirements. The concentration in Finance, Insurance, and Real Estate requires:

1. Prerequisites of ACCT 7000 and FIR 7050 or their equivalents.
2. Each candidate must complete a minimum of 33 semester hours of approved graduate courses. The 33 graduate credits include a minimum of 21 hours in the concentration (24 if a thesis is written.) The required core of courses in the Finance, Insurance, and Real Estate concentration include:
FIR 7150, Financial Management II
FIR 7410, Investment Theory and Portfolio Management, and
FIR 7840, Quantitative Applications for Finance
3. Three semester hours in a collateral area approved by the Area Master's Coordinator.
4. At least 24 of the 33 credit hours required must be in courses designated primarily for graduate students (7000 level or above).
5. Must pass a written and/or oral examination.

III. MBA Program

See the beginning of this College section for admission, prerequisite, and program requirements. The Finance Area Master's Coordinator will assist the individual student with the selection of specific courses required to earn a finance, insurance, and real estate concentration.

IV. Ph.D. Program

See the beginning of this College section for admission, prerequisites, and program requirements.

FINANCE (FIR)

6610. Cases in Managerial Finance. (3). Application of tools and principles introduced in previous courses to develop up-to-date problem solving techniques. Cases approached from standpoint of top level management, utilizing both quantitative and qualitative analysis. PREREQUISITE: FIR 7070 or equivalent.

6720. Management of Financial Institutions. (3). Financial policies and decision-making peculiar to financial institutions in the United States. Management of institutions consistent with adequate standards of liquidity and solvency. PREREQUISITES: FIR 3410 and FIR 3720.

7070. Financial Management I. (3). (7010). Discounting, risk measurement, valuation, capital budgeting, cost of capital, capital structure, dividend policy, working capital, financial instruments, and markets. PREREQUISITE: ACCT 7000 or equivalent.

7150. Financial Management II. (3). (7610). Analytical tools, concepts, and decision rules for acquisition and allocation of funds by the business firm. Topics include: capital budgeting under risk, capital rationing, cost of capital, capital structure, dividend policy, and working capital management. Cases and readings may be required. PREREQUISITE: FIR 7050 or equivalent.

7170-8170. International Financial Management. (3). (7620). Selected problems in international finance, foreign investment, and the international payments system; gold movements; foreign central banking, and international aspects of money markets; the impact of international financial cooperation. PREREQUISITES: FIR 3410; ECON 3610; or permission of instructor.

7171. International Financial Intermediation. (3). Process that facilitates flow of funds across national borders as a result of capital placements and financing of international trade; detailed analysis of international financial markets and intermediaries; how national governments and international organizations regulate, supervise, and tax financial intermediaries in integrated worldwide financial system.

7172. Global Financial Management. (3). Overview of corporate finance with emphasis on the international environment; present value and the opportunity cost of capital; valuation of future cash flows; capital budgeting; risk and return; long-term financing; dividend policy and capital structure; mergers and acquisitions. Elementary knowledge of accounting, statistics, PC, and microeconomics helpful.

7410-8410. Investment Theory and Portfolio Management. (3). Introductory graduate level course in the area of investments and portfolio management. Considers qualitative and quantitative risk and return characteristics of various investment opportunities, fundamental valuation models, timing techniques, efficient markets, speculation and hedging, and portfolio theory and practice. PREREQUISITE: FIR 7070 or equivalent.

7710-8710. Seminar in Investment Theory. (3). Current literature in investment theory and portfolio analysis. Topics include statistical techniques of analysis, technical analysis, fundamental analysis, investor perceptions, efficient markets, investigation of risk measurements, portfolio theory and applications, and speculative markets. PREREQUISITE: FIR 7410 or permission of instructor.

7721-8721. Speculative Markets. (3). Conceptual and practical aspects of the functioning of speculative markets in options, futures, and hard assets; stock option strategies, financial engineering, financial futures, stock index options, futures options, contemporary issues in futures and options. PREREQUISITE: FIR 7410 or 3710 or equivalent.

7723-8723. Financial Institutions. (3). Overview of financial markets in the U.S. economic system, principal institutions operating in these markets, economic functions they perform, and products and services they provide; rapidly changing regulatory and competitive environment within which these institutions operate; major current issues whose resolutions will shape the future financial environment.

7724-8724. Micro-Structure Theory. (3). Selected topics on organization and regulation of financial markets, including the way these impact liquidity and risk.

7725-8725. Micro-Structure Applications. (3). Advanced topics on organization and regulation of financial markets and the way these impact liquidity and risk. PREREQUISITE: COMP 6001 or equivalent

7726-35-8726-35. Current Topics in Finance, Insurance, and Real Estate. (3). Consult *Schedule of Classes*.

7736. Financial Management. (1.5-3.0). Successful financial management of the modern corporation; critical inter-relationships among finance and other functions of the firm; confrontation of financial problems using logic and recent advances.

7810-8810. Advanced Financial Management. (3). The most significant contributions to the advanced literature on managerial finance. Topics include capital budgeting under risk, capital rationing, cost of capital, capital structure, dividend policy, firm valuation, and working capital management. PREREQUISITE: FIR 7150 or equivalent.

7840-8840. Quantitative Applications for Finance. (3). Develops an understanding of fixed income markets and interest rate derivatives. Topics include bond mathematics, interest rate models, fixed income securities, corporate debt, and interest rate derivatives. This course also applies statistical and quantitative methods to solve problems in derivative securities. PREREQUISITE: FIR 7150.

7910-8910. Problems in Finance, Insurance, and Real Estate. (1-6). Directed independent reading and research projects in the finance, insurance, or real estate areas selected by the student with approval of supervising faculty member and Faculty Director. Proposed plan of study must be approved prior to enrollment.

†7996. Thesis. (1-6). Candidates desiring to write a thesis must fill out an application on the approved form after consulting with the major professor. The application must be filed with the Dean of the Graduate School.

8820. Theory and Practice of Financial Management. (3). Study of the more recent advanced literature of managerial finance and its applications. Intensive pursuit of approved individual topics. Oral presentations of research papers and cases. PREREQUISITE: FIR 8810.

8830. Capital Markets and Institutions. (3). Application of the theory of finance to the analysis of existing financial markets and institution emphasis on the structure of the market for corporate capital instruments and the effect of capital market movements on financial decision

8850. Seminar in Finance. (3). Emphasis on current issues in private sector finance. Designed to encourage students in finance to develop a firm understanding of the important theoretical and empirical contributions to the literature. Course will draw on readings and the research projects of individual students.

†Grades of S, U, or IP will be given.

Insurance, Real Estate, and Business Legal Studies

CAROL DANEHOWER, D.B.A.
Faculty Director Master's Programs
 Room 101, Business Building
 (901) 678-3721
 vdanehwr@memphis.edu

GAYLON GREER, Ph.D.
Area Master's Program Coordinator
 Room 437, Business Building
 (901) 678-4623
 gegreer@memphis.edu

MEMBERS

- GAYLON E. GREER, *Fogelman Professor of Real Estate*
 Ph.D. (1974), University of Colorado [1999]
 PHILLIP T. KOLBE, *Associate Professor*
 Ph.D. (1988), University of Arizona [2001]
 LARRY MOORE, *Associate Professor*
 J.D. (1976), Washington University [2001]

ASSOCIATE MEMBERS

- NANCY H. KRATZKE, *Associate Professor*
 J.D. (1980), Memphis State University [2000]
 MARS PERTL, *Professor*
 Ph.D. (1974), University of Iowa, [2002]
 RYAN L. TANKERSLEY, *Associate Professor of Business Law*
 J.D. (1972), Tulane University [1999]

The Area of Insurance, Real Estate, and Business Legal Studies offers the Master of Science degree with a major in Business Administration and a concentration in Real Estate Development and the Master of Business Administration with a major in Business Administration and a concentration in Finance, Insurance, and Real Estate.

I. MSBA Program

See the beginning of this College section for admission, prerequisite, and program requirements. The concentration in Real Estate Development requires:

1. Each candidate must complete a minimum of 33 semester hours of approved graduate courses, of which at least 24 semester hours must be in courses designated primarily for graduate students (7000 level or above).
2. A minimum of 21 semester hours must be completed in the concentration. The required courses are:
 FIR 6310, Real Estate Law
 FIR 6340, Real Estate Appraisal
 FIR 7301, Contemporary Real Estate Theory and Practice
 FIR 7302, Decision Process in Development of Commercial and Industrial Real Estate
 FIR 7320, Financing Real Estate Transactions
 FIR 7350, Real Estate Investment Analysis
 FIR 7910, Problems in Finance, Insurance, and Real Estate
3. Three semester hours must be completed in a collateral area approved by the Area Master's Coordinator.
4. Candidates must pass a written or oral comprehensive examination.

II. MBA Program

See the beginning of this College section for admission, prerequisite, and program requirements.

INSURANCE, REAL ESTATE, AND BUSINESS LEGAL STUDIES (FIR)

011. Estate Planning and Law of Taxation. (3). A survey course of the law of taxation as applied to the transmission of property by gift or death and its impact upon accumulations of wealth. Estate planning from an individual viewpoint designed to create, maintain, and distribute the maximum estate possible. PREREQUISITE: FIR 3011 or permission of the instructor.

310. Real Estate Law. (3). This course covers law and legal instruments as applied to real estate. It is designed to serve the needs of property owners and those engaged in the real estate business.

340. Real Estate Appraisal. (3). Basic terminology, principles, procedures, and issues; nature of value, principles of value, appraisal process, market approach, cost approach, capitalization of income approach, gross rent multiplier approach, and appraisal reports.

6810. Property and Liability Insurance (3). Forms and functions of fire, marine, automobile, general liability, and other types of property and liability insurance. Emphasis on business and industrial applications.

6820. Life and Health Insurance. (3). Functions of life and health insurance. Emphasis on economic security needs, human behavior, and problems related to death and dying; individual life, health, and annuity contracts and social insurance; concepts in risk selection and regulation.

6840. Multiple Line Insurance Company Operations. (3). Company and industry functions other than contracts, including rating, rate-making, reserves, auditing, underwriting, reinsurance, claims production engineering, and governmental supervision.

6860. Employee Benefit Programs. (3). Analysis of life, health, and pension benefit programs from viewpoint of benefit planner. Topics include reasons for providing such programs, alternate methods for providing benefits, and broadly designing specifications for benefits.

6880. Risk Management Finance. Integrating financial theory into practice of risk management for the firm; quantitative tools to carry out risk management process by developing spreadsheets to measure expected loss, determine appropriate risk handling methods, and analyze risk financing arrangements. PREREQUISITES: FIR 7050 or equivalent.

7040. Business Environment and the Law. (3). (7011). Legal procedure and the law of contract, sales, negotiable instruments, creditor's rights, agency, business organizations, and property will be considered. Business environmental aspects of court decisions and administrative agencies respecting the regulation of business, taxation, antitrust law, labor law, consumer and environmental protection laws.

7050. Financial and Legal Concepts for Business. (3). Business finance and legal, social, and political environment of business; prerequisite for MBA Core II. PREREQUISITE: ACCT 7000 or equivalent.

7301. Contemporary Real Estate Theory and Practices. (3). Overview of significant topics in real estate finance, investments, and valuation; lecture and group discussion of key issues in real estate theory and practice.

7302. The Decision Process in the Development of Commercial and Industrial Real Estate. (3). Analysis of methodologies and market strategies in the evaluation of investments in commercial and industrial land development; identification, conceptualization and execution of action programs associated with developing successful real estate projects, industrial parks, warehouse-distribution centers, and related land uses.

7320. Financing Real Estate Transactions. (3). Economic, institutional, and legal issues associated with real estate finance; emphasis on investor and developer financing, and secondary mortgage market.

7350. Real Estate Investment Analysis. (3). Analytical tools, concepts, and decision rules for real estate asset acquisition and disposition; ownership forms, tax structuring, cash flow forecasting, risk analysis, and decision making.

7737. Business Legal Environment. (1.5-3.0). General overview of several legal subjects that executives are likely to confront; presentation and discussion of relevant statutory, regulatory, and judicial pronouncements.

7910-8910. Problems in Finance, Insurance, and Real Estate. (2-4). Directed independent reading and research projects in the finance, insurance, or real estate areas selected by the student with approval of supervising faculty member and Faculty Director. Program of study must be approved prior to enrollment.

Management

CAROL DANEHOWER, D.B.A.
Faculty Director Master's Programs
 Room 101, Business Building
 (901) 678-3721
 vdanehwr@memphis.edu

CRAIG LANGSTRAAT, J.D., LL.M., C.P.A.
Interim Faculty Director Ph.D. Programs
 Room 426, Business Building
 (901) 678-5250
 cjlngstr@memphis.edu

THOMAS MILLER, Ph.D.
Management Master's Program Coordinator
 Room 247, Business Building
 (901) 678-4563
 thmiller@memphis.edu

ROBERT TAYLOR, Ph.D.
Management Ph.D. Program Coordinator
 Room 328, Business Building
 (901) 678-4551
 rrtaylor@memphis.edu

MEMBERS

- RABI S. BHAGAT, *Professor*
 Ph.D. (1977), University of Illinois [2003]
 LILLIAN H. CHANEY, *Professor*
 Ed.D. (1972), University of Tennessee [2001]
 CAROL DANEHOWER, *Associate Professor*
 D.B.A. (1987), University of Kentucky [2001]
 PETER S. DAVIS, *Associate Professor*
 Ph.D. (1988), University of South Carolina [2003]
 COY A. JONES, *Professor*
 Ph.D. (1981), University of Oklahoma [2003]
 BENWARI L. KEDIA, *Professor*
 Ph.D. (1976), Case-Western Reserve [2003]
 THOMAS R. MILLER, *Professor*
 Ph.D. (1972), Ohio State University [2001]
 ROBERT W. RENN, *Associate Professor*
 Ph.D. (1989), Georgia State University [2001]
 ROBERT R. TAYLOR, *Associate Professor*
 Ph.D. (1979), Louisiana State University [2000]
 HOWARD S. TU, *Associate Professor*
 Ph.D. (1988), University of Massachusetts [2001]
 JAMES VAN SCOTTER, *Assistant Professor*
 Ph.D. (1994), University of Florida [2004]
 PETER WRIGHT, *Professor*
 Ph.D. (1975), Louisiana State University [2001]

ASSOCIATE MEMBERS

- BARBARA D. DAVIS, *Assistant Professor*
 Ed.D. (1990), Memphis State University [2001]
 JOHN BARRY GILMORE, *Associate Professor*
 Ph.D. (1971), University of Oklahoma [2003]

I. In the Area of Management, qualified students may work toward the Master of Science degree in Business Administration with a concentration in Management, the Master of Business Administration with a major in Business Administration and concentration in Management, or the Ph.D. in Business Administration with a concentration in Management.

II. MS In Business Administration with Concentration In Management

A. Program Admission:

1. Satisfactory performance on the Graduate Management Admission Test (GMAT)
2. Satisfactory undergraduate grade point average

B. Concentration Prerequisites:

Alternate Core I or its equivalent, except ISDS 7080.

C. Concentration Requirements:

1. Each candidate must complete a minimum of 33 semester hours of approved graduate courses. The 33 graduate credits include a minimum of 21 hours in the concentration (24 if a thesis is written), including MGMT 7130. The required core courses in the Management concentration include:
 MGMT 7421, Seminar in Organizational Behavior I
 MGMT 7500, Seminar in Strategic Management
 MGMT 7530, Seminar in the Development of Management Thought
2. Three semester hours in a collateral area approved by the student's advisor (nine if thesis is written).
3. The 33 credit hours required must be in courses designated for graduate students (7000 level or above).
4. Must pass a written or oral comprehensive examination.

III. MBA Program

See the beginning of this College section for admission, prerequisite, and program requirements. The management concentration consists of 9 hours of Management courses approved by the Area Master's Coordinator.

IV. Ph.D. Program

See the beginning of the College section for admission, prerequisite, and program requirements.

Students are expected to be enrolled in the program on a full-time basis during their course work, and one year during their dissertation stage. Doctoral candidates must register for dissertation credit each academic semester until the dissertation is completed in order to remain in active status. This commitment is expected to require three to four years of full-time study. Course work should be completed within two to three years, depending upon a student's prior academic background.

In addition to these requirements, Ph.D. students are expected to develop a high level of skills in both research and teaching. Doctoral students are provided ample opportunity to develop these skills through class work, seminars, and assistantships.

MANAGEMENT (MGMT)

6410. Office Management. (3). Modern methods of office organization and management, including office systems and procedures, office layout and design, and ergonomic considerations.

7030. Management and Organization. (3). (7000). Comprehensive analysis of concepts and applications required for effective performance of the manager's job in organizations with varied environments; management as a sub-function of the total organizational system interacting with objectives, planning and control, organizational design, and interpersonal relationships; nature of operations management.

7125. Organizational Behavior and the International Context. (3). Concepts and theories needed to understand the process of managing people, work groups, and organizations in a global environment; role of cultural differences relevant in international context. **PREREQUISITE:** Admission to IMBA concentration.

7130. Seminar in Organizations. (3). Micro and macro examination of factors affecting behavior within organizations; motivation, leadership, group dynamics, organizational design and development, and conflict management; consideration of behavior, structure, and processes of organizations. **PREREQUISITE:** MGMT 7030.

7160. Seminar in Business Policy. (3). (7410). The development of the top management viewpoint, the basic objective being to develop executive abilities and creative thinking; selected problem areas of modern business will be explored; alternative courses of action appraised, and decision-making ability developed. **PREREQUISITE:** 12 semester hours of CORE II courses.

7161. International Business Strategy (3). Business strategy from perspective of general manager in a multinational enterprise, promoting long-term success of the organization; heavy emphasis on case study; includes management of multinational enterprise, strategic thinking in a global context, internal firm analysis, industry and competitor analysis, and related international strategy issues. **PREREQUISITES:** Admission to IMBA concentration.

7170. International Management. (3). Foreign operations of American firms, impact of foreign competition on the domestic market, and management of multinational enterprises; identification, analysis and resolution of managerial issues in multinational business operations. **PREREQUISITE:** MGMT 7030.

7173. Executive Communications (3). Theory of communication essential to management with written, oral, and interpersonal applications; use of case problems to develop effective, efficient, and ethical communication strategies; impact of communication technology; intercultural communication; collection, analysis, and organization of primary and secondary data, followed by written and oral presentations.

7210-8210. Seminar in Industrial Relations. (3). An in-depth examination of selected problems in labor management relations; emphasis on an understanding of past practices as well as current trends that relate to present-day activities in industrial relations. **PREREQUISITE:** MGMT 7030.

7220-8220. Seminar in Human Resources Administration. (3). Problems and issues deriving from movements and trends in the management of human resources caused by changing laws, union activities, and the demands of our culture. The student is required to select one or more recent concepts or problems for intensive study and critical analysis. **PREREQUISITE:** MGMT 7030.

7230-8230. Collective Bargaining and Labor Arbitration. (3). Advanced analysis of labor law and collective bargaining theory on which labor arbitration is based. Legal status and strategy and tactics of labor arbitration. PREREQUISITE: MGMT 7030.

7240-8240. Seminar in Human Resource Management and Careers. (3). Research theories of career stages, career and adult life transitions, work and family conflicts, and managing a diverse work force; international human resource issues and career issues. PREREQUISITE: MGMT 7030.

7260-8260. Seminar in Job Analysis, Selection, and Performance Appraisal. (3). Concepts and issues concerning understanding of jobs and performance of jobs; job analysis that creates foundation for selection and performance; use of job requirements for developing selection criteria and performance standards. PREREQUISITE: MGMT 7030.

7410. Intercultural Business Communication. (3). Intercultural communication skills needed to conduct business globally; emphasis on verbal and nonverbal communication skills, contrasting cultural values, universal systems, cultural variability, social skills, interpersonal and intergroup relationships, differences in temporal conception, and cultural shock.

7421-8421. Seminar in Organizational Behavior I. (3). Individual and group behavior within work organizations; emphasis on the study of behavioral science concepts and research and their applications to management of organizations. Individual studies will be pursued with group analysis and discussion at regular class meetings. PREREQUISITE: MGMT 7030.

7422-8422. Seminar in Organizational Theory. (3). Major historical and contemporary theories of organization; emphasis on study of organizational structures, principles, techniques, and processes as they relate to management of organizations. Individual studies will be pursued with group analysis and discussion at regular class meetings. PREREQUISITE: MGMT 7030.

7423-8423. Seminar in Organizational Behavior II. (3). Employee-organization linkages, theories of human stress and cognition in organizations; cognitive processes in organizational contexts including social cognition, commitment, self-regulation, intrinsic-extrinsic rewards, coping with stressful organizational and life events, and determinants of pro-social behavior in work contexts. PREREQUISITE: MGMT 7030.

7500-8500. Seminar in Strategic Management. (3). Literature of strategic management, including contributions of other fields to strategic management. PREREQUISITE: MGMT 7030.

7504-8504. Seminar in International Business Strategy. (3). Nature and economic role of multinational corporations, including impact of legal, political, educational, sociological, and cultural variables upon performance and managerial activity of multinational firms. PREREQUISITE: MGMT 7160.

7506-8506. Seminar in Industry and Competitive Analysis. (3). Competitive environment of business organizations; emphasis on understanding industry structure and the positioning of firms in relation to major rivals. PREREQUISITE: MGMT 7160.

7508-8508. Seminar in Corporate Strategy. (3). Research literature on corporate-level strategy topics; corporate strategy as well as decision and implementation processes and problems; strategic issues of multibusiness firms. PREREQUISITE: MGMT 7160.

7510-8510. Seminar in Strategy and Planning Research. (3). Specialized areas in strategic management review of relevant literature and methodology; emphasis on problem determination, analysis and preparation of comprehensive reports and research proposals. PREREQUISITE: MGMT 7160.

7520-8520. Seminar in Organizational Change and Development. (3). Diagnosis of problems reducing organizational effectiveness, techniques for introducing and implementing change in organizations, theoretical basis of organizational development, and rationale for organizational development. PREREQUISITE: MGMT 7030.

7530-8530. Seminar in the Development of Management Thought. (3). Historical evolution of management thought designed to enable students to acquire a mastery of the literature in the field; emphasis on the work of pioneers and major contributions to the development of management thought.

7910-8910. Problems in Management. (1-6). Directed independent research projects in an area selected by the student with approval of the staff member supervising and permission of Faculty Director. Proposed plan of study must be approved prior to enrollment.

7921-8921. Seminar in Management Research. (3). Some of the statistical techniques available to the business researcher, including contingency tables, bivariate correlation analysis, regression analysis, ANOVA, discriminant analysis, and factor analysis; use of computerized statistical packages and interpretation of the results of these packages. PREREQUISITE: ISDS 3711 or 7020 or equivalent.

†7996. Thesis. (3-6). Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Faculty Director of Master's Programs.

8610. Seminar in Administrative Theory and Practice. (3). Critical appraisal of current theories in administration: responsibilities, roles, values, and underlying assumptions involved in administration; interaction of administrators, organizations, and environments; process involved in administering complex organizational systems with multiple goals and programs in varied environments.

†Grades of S, U, or IP will be given.

BUSINESS EDUCATION (BUED)

7620-8620. Organization and Supervision of Vocational Business Education. (3). Office occupations programs with special emphasis on types of curriculums, production laboratories, and cooperative programs. Classroom supervision, physical layout, administration of programs, and utilization of block time.

7640-8640. Improvement of Instruction in Bookkeeping and General Business Subjects. (2-3). Critical evaluation of content, visual aids, methods, and testing in bookkeeping and general business subjects.

7655-8655. Materials and Methods in Vocational Education. (3). Instructional media and aids relating to vocational office education with emphasis on recent developments and research; particular emphasis on individual instruction techniques for the block-time approach to office education programs.

7660-8660. Tests and Measurements in Business and Office Education. (3). Standardized and published tests in business education, new trends in testing, application of sound testing theory and techniques to business education with special emphasis on evaluation of skill development, establishment of realistic office competencies, and evolution of grading standards.

7720-8720. Guidance in Business and Office Education. (3). History, principles, and philosophy of guidance in business education; relationships of business teacher to school guidance services; special attention directed to the development, scope, and responsibilities for vocational guidance with respect to selection and retention of vocational students.

Management Information Systems

CAROL DANEHOWER, D.B.A.
Faculty Director Master's Programs
Room 101, Business Building
(901) 678-3721
vdanehwr@memphis.edu

CRAIG LANGSTRAAT, J.D., LL.M., C.P.A.
Interim Faculty Director Ph.D. Programs
Room 426, Business Building
(901) 678-5250
cjlngstr@memphis.edu

WADE M. JACKSON, Ph.D.,
MIS Master's Program Coordinator
Room 226, Business Building
(901) 678-4550
wjackson@memphis.edu

PRASHANT PALVIA, Ph.D.
 MIS Ph.D. Program Coordinator
 Room 312, Business Building
 (901) 678-3569
 ppalvia@memphis.edu

MEMBERS

- LLOYD D. BROOKS, *Professor*
 Ed.D. (1972), University of Tennessee [2001]
 MARK FROLICK, *Associate Professor*
 Ph.D. (1991), University of Georgia [2001]
 MARK L. GILLENSON, *Professor*
 Ph.D. (1974), Ohio State University [2001]
 PRASHANT PALVIA, *Professor*
 Ph.D. (1984), University of Minnesota [2001]
 JUDITH C. SIMON, *Professor*
 Ed.D. (1976), Oklahoma State University [2001]
 JAMES C. WETHERBE, *Professor, Interim Dean of Fogelman College of Business and Economics*
 Ph.D. (1976), Texas Tech University [2001]

ASSOCIATE MEMBERS

- CHARLES J. CAMPBELL, *Associate Professor*
 Ph.D. (1975), University of Texas at Austin [2001]
 WADE M. JACKSON, *Associate Professor*
 Ph.D. (1983), Texas A & M University [2003]
 BRIAN JANZ, *Assistant Professor*
 Ph.D. (1995), University of Minnesota [2003]
 STEVEN MARK ZELTMANN, *Assistant Professor*
 Ph.D. (1991), Florida State University [2003]

ADJUNCT MEMBERS

- RAVINDER NATH
 Ph.D. (1980), Texas Tech University [2003]
 RONALD B. WILKES
 Ph.D. (1987), University of Minnesota [2001]

I. In the Area of Management Information Systems qualified students may work toward the Master of Science degree in Business Administration with a concentration in Management Information Systems, a Master of Business Administration degree with a concentration in Management Information Systems, and the Ph.D. in Business Administration with a concentration in Management Information Systems and Decision Sciences. The area offers courses in information systems, production operations management, and quantitative methods.

II. MSBA with Concentration in Management Information Systems

A. Program Admission

1. Satisfactory performance on the Graduate Management Admissions Test (GMAT).
2. Satisfactory undergraduate grade point average.

B. Concentration Prerequisites

For those students with a limited information systems background, the area requires ISDS 7060

C. Concentration Requirements

1. Each candidate must complete a minimum of 33 semester hours of approved graduate courses. The 33 graduate credits include a minimum of 21 hours in the concentration (24 if a thesis is written).
2. ISDS 7160, Computer Hardware and System Software; 7605, Business Database Systems; 7610, Systems Analysis and Design; 7615, Data Communications Systems and Network; and 7640, Information Systems Management and Planning as part of their degree program. Other courses can be selected from ISDS courses as approved by the Area Master's Coordinator.
3. Nine semester hours of electives will be selected with the approval of the Area Master's Coordinator.
4. At least 24 of the 33 credit hours required must be in courses designed primarily for graduate students (7000 level or above).
5. Must pass a written comprehensive examination.

III. MBA Program

See the beginning of this College section for admission, prerequisite, and program requirements.

MIS concentration students may be required to take ISDS 7060 as a prerequisite course before starting their concentration course work. Electives in the concentration must be approved by the Area Master's Coordinator.

IV. Ph.D. Program

See the beginning of this College section for admission, prerequisite, and program requirements. Additional guidelines defined by the department are available from the Ph.D. program coordinator.

MANAGEMENT INFORMATION SYSTEMS (ISDS)

6000-09. Topics in Teaching Methods in Information Technology. (3). Selected topics of current interest in management information systems and computer software applications. Designed for teacher certification requirements. Topics are varied and announced in *Schedule of Classes*. Note: Restricted to teacher certification; not applicable toward business degree requirements. PREREQUISITE: Permission of instructor.

6780. Applied Software Development Project. (3). Application of programming and systems development concepts, principles, and practices to a comprehensive systems development project. Team approach used to analyze, design, and document realistic systems of moderate complexity. Use of project control techniques, formal presentations, and group dynamics in development of information systems. Development of database to support system. PREREQUISITE: ISDS 3770.

6790. Management Information Systems. (3). Comprehensive view of decision-maker's information requirements, role of current information gathering means and methods; problems and techniques in design and installation of responsive systems, emphasizing executive use of system's products; systems approach utilizing current planning and control models studied through current literature. PREREQUISITES: ISDS 2755 and one college mathematics course, or permission of the instructor.

7050. Information Systems for Management Decisions. (3). Concepts of modern information systems, emphasis on integration of automated information processing within organizational structure and on computerized management tools for decision-making. PREREQUISITES: MATH 1211 or higher and permission of instructor.

7060. Program Development and File Structures. (3). Programming principles, program logic development, internal data structures, and file organization; development of structures and computer programs using a modern programming language.

7160. Computer Hardware and System Software. (3). Introduction to the technology of computing; processor operation including fetch/execute, input/output, instruction types, interrupt handling, addressing schemes and multiprocessing; business systems software including operating systems from single-user single-task to multi-user multitask; major current operating systems.

7190. Programming for Business. (3). Fundamentals of programming for business projects, including Internet-based business applications and object-oriented programming languages. PREREQUISITE: ISDS 7060 or permission of instructor.

7465-8465. Information Systems In Organizations. (3). Fundamental concepts of systems and organizations; roles, types and applications of information systems (IS) in organizations; basic IS skills, techniques, and methodologies.

7470-9-8470-9. Topics In Information Systems and Decision Sciences. (1-3). Studies in ISDS as applied to solution of current operational problems in businesses. Topics change each semester as determined by relevant developments in decision sciences; consult the *Schedule of Classes* for current topic. (Maximum 9 hours credit.) PREREQUISITE: Permission of instructor.

7605-8605. Business Database Systems. (3). Management of database for effective support of management information systems. Topics include characteristics and design of schemas and subschemas for hierarchical, network, and relational data models. PREREQUISITE: ISDS 7060 or permission of instructor.

7610-8610. Systems Analysis and Design. (3). Comprehensive structured approach to application system development process; emphasis on requirements analysis, logical specifications, structured design, and implementation of information systems. COREQUISITE: ISDS 7605.

7615-8615. Data Communications Systems and Networks. (3). Introduction to concepts and terminology of data communication, network design, and distributed information systems. Topics include equipment protocols and architectures, transmission alternatives, the com-

munications environment, regulatory issues, and network pricing and management.

7620-8620. Decision Support Systems and Expert Systems. (3). Application of information systems tools to problem solving and decision making; emphasis on developing and applying concepts and technologies of decision support systems and expert systems. **PREREQUISITES:** ISDS 7605, 7120.

7630. Information Systems Projects. (3). Development or evaluation of both of specialized software product; field studies to collect and analyze data pertinent to significant information systems issues. **PREREQUISITE:** ISDS 7610.

7640-8640. Information Systems Management and Planning. (3). Information systems planning and management for the corporate executive and information systems manager. Emphasis on information as a critical resource and its role in policy and long-range planning. **COREQUISITES:** ISDS 7605, 7610, 7615.

7650-8650. Global Information Technology and Systems Management. (3). Information technology's impact on globalizations of businesses; international IT environment; models and issues in international IS; planning and managing global systems; case studies and applications. **PREREQUISITE:** Permission of instructor.

7655-8655. Advanced Systems Analysis and Design. (3). Advanced concepts in information systems planning and development with focus on current information technologies and systems development practices that lead to timely delivery of effective information systems solutions; special attention on communication and interpersonal skills required for today's systems development activities. **PREREQUISITE:** ISDS 7610.

7660-8660. Advanced Networking and Database Management. (3). Integration of computer networking and database management concepts in a distributed information systems environment; topics include architecture, development, security, and management of distributed systems, client/server systems, distributed objects, the Internet, and intranets; current products, tools, and methodologies for developing and managing these systems. **PREREQUISITES:** ISDS 7605 and ISDS 7615.

7665-8665. Advanced Business Computing Environments. (3). Technical aspects and managerial implications of several state-of-the-art technologies with potential effects on competitive advantage, probability and cost, and personnel resources. **PREREQUISITES:** ISDS 7605, ISDS 7610, and ISDS 7615, or permission of the instructor.

7670-8670. Cryptography and Data Security. (3). (Same as COMP 7120-8120). Ancient and modern cryptology and ciphers; security problems in computing; basic encryption and decryption; public-key cryptography, notions of security in computing environments; encryption, protocols; security from programs, OS's, databases, PC's, networks and communication; legal, ethical and human factors in computer security. **PREREQUISITE:** permission of instructor; MATH 701 recommended.

7910-8910. Problems in Management Information Systems and Decision Sciences. (1-6). Directed independent research projects in an area selected by the student with approval of supervising faculty member and Faculty Director. Proposed plan of study must be approved prior to enrollment.

7996. Thesis. (3-6). Application for writing a thesis must be filled out on an approved form after consultation with the major professor and led with the Faculty Director of Masters Programs.

700-9. Topics in Information Systems. (1-3). In-depth study of selected current topics in MIS and related areas. Topics change each semester as determined by relevant developments; consult *Schedule of Classes* for current topic. (Maximum of 9 hours credit). **PREREQUISITE:** Permission of instructor.

710. Research Seminar in Information Systems I. (3). Scientific methodology of MIS research; MIS frameworks and theory of MIS; organization-critique and analyze foundational papers; in-depth study of researchable topics. **PREREQUISITE:** Permission of instructor.

720. Research Seminar in Information Systems II. (3). Development of a research proposal; critique and evaluation related to research and the proposal. **PREREQUISITE:** ISDS 8710 or permission of instructor.

Marketing

CAROL DANEHOWER, D.B.A.
Faculty Director Master's Programs
Room 101, Business Building
(901)678-3721
vdanehwr@memphis.edu

CRAIG LANGSTRAAT, J.D., LL.M., C.PA.
Faculty Director Ph.D. Program
Room 426, Business Building
(901)678-5250
cjlngstr@memphis.edu

GREGORY BOLLER, Ph.D.
Marketing Master's Program Coordinator
Room 326, Business Building
(901) 678-2667
gboller@memphis.edu

DANIEL SHERRELL, Ph.D.
Marketing Ph.D. Program Coordinator
Room 334, Business Building
(901) 678-4552
dsherrll@memphis.edu

MEMBERS

- EMIN BABAKUS, *Professor, Associate Dean for Faculty*
Ph.D. (1985), University of Alabama [2003]
ROBERT L. BERL, *Professor*
Ph.D. (1983), Georgia State University [2003]
GREGORY BOLLER, *Associate Professor*
Ph.D. (1988), Pennsylvania State University [2000]
ALAN BUSH, *Professor*
Ph.D. (1983), Louisiana State University [2001]
ROBERT P. BUSH, *Associate Professor*
Ph.D. (1987), Louisiana State University [1999]
T. BETTINA CORNWELL, *Professor*
Ph.D. (1988), University of Texas at Austin [2000]
JAMES P. RAKOWSKI, *Professor*
Ph.D. (1971), Columbia University [2003]
DANIEL L. SHERRELL, *Professor*
Ph.D. (1980), University of South Carolina, Columbia [2001]
ROBERT NEIL SOUTHERN, *Associate Professor*
Ph.D. (1981), Arizona State University [2001]
PETER KIET TAT, *Associate Professor*
D.B.A. (1979), Mississippi State University [2001]

ADJUNCT MEMBER

JEFFREY G. BLODGETT
Ph.D. (1992), Indiana University [2000]

I. In the Area of Marketing, qualified students may work toward the Master of Science degree in Business Administration with a concentration in Marketing, the Master of Business Administration with a major in Business Administration and a concentration in Marketing, or the Ph.D. with a major in Business Administration and a concentration in Marketing.

II. MS Degree In Business Administration Program

A. Concentration Prerequisites

Alternate Core I or its equivalent, except ISDS 7080.

B. Concentration in Marketing

- Each candidate must complete a minimum of 33 semester hours of approved graduate courses. The 33 graduate credits include a minimum of 21 hours in the concentration (24 if a thesis is written).
- The following courses must be included in the core of the concentration:
MKTG 7140, Strategic Marketing
MKTG 7213, Research Methodology
MKTG 7510, Negotiation Strategies
MKTG 7511, Market Driven Quality
- Three semester hours in a collateral area approved by the student's advisor. This will include MGMT 7160 (Seminar in Business Policy) if an integrating business policy course has not been successfully completed.

Grades of S, U, or IP will be given.

4. At least 24 of the 33 credit hours required must be in courses designated primarily for graduate students (7000 level or above).
5. Must pass a written and/or oral examination.

III. MBA Program

See the beginning of this College section for admission, prerequisite and program requirements.

IV. Ph.D. Program

See the beginning of this College section for admission, prerequisite and program requirements.

In addition to these requirements, the following are an integral part of the Ph.D. program with a concentration in Marketing.

- A. **Foreign Language/Communication Skills:** Ph.D. students with a concentration in Marketing may select one of the following options to meet this requirement:
 1. Demonstrate proficiency in a computer programming language, or complete satisfactorily (a grade B or better) one of the following: COMP 6001, Computer Programming; COMP 6002, Accelerated Computer Programming; or other courses as approved.
 2. Demonstrate proficiency in a foreign language pertinent to the student's area of research interests.
 3. Students whose native language is other than English should demonstrate proficiency in English with evidence beyond the TOEFL scores.
- B. **Teaching:** Developing teaching skills is a major component of the Ph.D. program. In the course of the program, doctoral students are provided with a balanced teaching and research assistantship. Student evaluations as well as faculty input (by observing doctoral students teach) are used to assess teaching skills. If teaching skills are found inadequate, the Ph.D. candidate will be advised an appropriate course of action.
- C. **GPA Requirement:** Marketing doctoral students are required to maintain a minimum of 3.50 GPA in the marketing courses.

MARKETING (MKTG)

7060. Marketing Management. (3). For graduate students with undergraduate degrees in fields other than business administration. Marketing management as it relates to product, price, place, and promotional activities in both profit and nonprofit organizations; external environment as it affects marketing.

7101. Global Marketing. (3). Overview of marketing principles and subsequent deconstruction of culture-bound thinking regarding marketing processes; development of marketing management skills through the examination of marketing content areas in concert with examination of culture and its influence on marketing. PREREQUISITE: Admission to IMBA concentration.

7140. Strategic Marketing. (3). Analytical approach to strategy formation as it relates to marketing management activities of business enterprise; focus on development of strategic framework for decision-making for both domestic and global organizations. PREREQUISITE: MKTG 7060 or equivalent.

7170. Multinational Marketing Seminar. (3). Emphasis on the cross-cultural aspects of multinational marketing through case studies and individual research. The execution of marketing concepts and theories in different cultures and environments. Similarities and differences of applications and results. PREREQUISITE: MKTG 7060 or permission of Faculty Director of Master's Programs.

7213. Research Methodology. (3). Nature and scope of research philosophy and methods in business; primary and secondary research procedures; emphasis on the preparation and presentation of independent research findings and on utilization of multivariate analysis techniques. PREREQUISITE: MKTG 7060 or permission of instructor.

7230-39-8230-39. Special Topics In Marketing. (3). Special study of problems in marketing. Topics areas change each semester as determined by relevant developments in marketing. Course may be repeated once with a change in content. Current topic listed in *Schedule of Classes*. PREREQUISITE: MKTG 7060 or permission of Faculty Director of Master's Programs.

7251. Ethics in Business. (1.5). Ethical frameworks, theories, and definitions available for use in ethical business decision-making; legalization of business ethics and processes involved in developing a business code of ethics; ability to recognize and identify ethical issues in business decision-making emphasized.

7260. Advanced Marketing Strategy. (1.5). In-depth analysis of marketing concepts and issues involved in formulating, implementing, and evaluating marketing strategies; topics include products and brand equity management, integrated marketing communication strategies, TQM, and relationship marketing philosophies; emphasis on processes required to implement and evaluate marketing strategies.

7270-8270. Strategic International Marketing. (3). Strategic decision-making in a global environment; strategic planning systems, including marketing information systems and analysis, leading to formulation of international marketing strategies. PREREQUISITE: MKTG 7170 or equivalent.

7510. Negotiation Strategies. (3). Application of negotiation strategies and tactics in a variety of business, non-profit, and political environments; emphasis on collaborative and competitive styles of negotiating. PREREQUISITE: MKTG 7060 or permission of Faculty Director of Master's Programs.

7511. Market Driven Quality. (3). Application of TQM principles and techniques in marketing operations; emphasis on measuring and analyzing quality from customer's perspective. PREREQUISITE: MKTG 7060 or permission of Faculty Director of Master's Programs.

7512. Corporate Macromarketing. (3). In-depth seminar on how corporations acquire and deploy political and interest group assets to control broad market forces; topics include corporate lobbying, PAC management, political intelligence-gathering operations, and their effectiveness toward accomplishing macromarketing objectives.

7910-8910. Problems In Marketing. (1-6). Directed independent research projects in an area selected by the student with the approval of the faculty member supervising and permission of the Faculty Director. Proposed plan of study must be approved prior to enrollment.

†7996. Thesis. (3-6). Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Faculty Director of Master's Programs.

8215. Ethical Criticism of Marketing Science. (3). Ethical analyses and critiques of scientific writing; deconstructive strategies of reading; emphasis on literary and rhetorical tactics employed in presentation of marketing theory.

8216. Measurement and Structural Equation Modeling. (3). Theoretical and methodological issues in research design, measurement, and method; development of measures of marketing constructs and empirical assessment of measurement properties; model development and testing to expand marketing theory; LISREL methodology to test measurement and structural models. PREREQUISITE: MKTG 8215 and PSYC 8302 or equivalent.

8217. Theory Construction and Evaluation. (3). Analyses of development of theory in marketing and management; critiques of dominant paradigms; examination of tenets of philosophy of science as they relate to theory generation and testing.

8222. Advanced Marketing Management Thought. (3). State-of-the-art thought in marketing management; analyses of foundations of marketing management theory; emphasis on developing new research approaches to improve marketing practice.

8223. Advanced Consumer Behavior. (3). Survey of theoretic and methodological contributions of consumer behavior research in area of human information processing, search for information, complex decision-making, motivations, and attitudes; emphasis on tracing major research streams in the literature through examination of current journal articles; research paper required. PREREQUISITE: Permission of instructor.

8930. Advanced Research Methodology. (3). Detailed coverage of topics relevant to conducting research in behavioral sciences, particularly marketing, including sampling techniques; experimental design concepts (random and fixed effects models, blocking designs, multi factor, use of repeated measures); development and evaluation of measurement instruments; application of multivariate techniques to marketing problems. PREREQUISITE: ISDS 7020 or equivalent.

†Grades of S, U, or IP will be given.

The College of Communication and Fine Arts

RICHARD R. RANTA, Ph.D.,
Dean

DAN LATTIMORE, Ph.D.,
Director of Graduate Studies

GRADUATE ACADEMIC PROGRAMS

Department	Major	Concentration Within Major	Degree Offered
Art	Art	(1) Ceramics (2) Graphic Design (3) Interior Design (4) Painting (5) Printmaking/Photography (6) Sculpture	Master of Fine Arts (M.F.A.)
	Art History	(1) Egyptian Art and Archaeology (2) General Art History	Master of Arts (M.A.)
Communication	Communication	(1) Communication (2) Film and Video Production	Master of Arts (M.A.)
		Communication Arts	Doctor of Philosophy (Ph.D.)
Journalism	Journalism	(1) General Journalism (2) Journalism Administration (3) Online Journalism	Master of Arts (M.A.)
Music	Music	(1) Composition (2) Jazz and Studio Music (3) Music Education (4) Music History (5) Pedagogy (6) Performance (7) Orff-Schulwerk (8) Sacred Music	Master of Music (M.Mu.)
		(1) Composition (2) Performance (3) Sacred Music (4) Music Education	Doctor of Musical Arts (D.M.A.)
		Musicology	Doctor of Philosophy (Ph.D.)
Theatre and Dance	Theatre		Master of Fine Arts (M.F.A.)

Individual program requirements described in the Graduate School Issue of the 1999-2001 Bulletin of The University of Memphis are subject to change. Please consult your department or the Office of the Graduate School for changes that may occur before publication of the next issue of this Bulletin; or consult the Graduate School website at: <http://www.people.memphis.edu/~gradsch> for the latest catalog updates.

COMMUNICATION/FINE ARTS (CCFA)

3001. Arts in the Schools Institute. (1). Provides an opportunity to discover and explore impact of aesthetic education. Students view performances and exhibits and experience exploratory workshops by teaching artists.

Art

JAMES E. JACKSON, M.F.A., *Chair*
Room 201, Jones Hall

MICHAEL R. SCHMIDT, M.G.D.
Coordinator of Graduate Studies
(901) 678-2216

E-mail: mschmidt@memphis.edu
www.people.memphis.edu/~artdept/artdept.html

MEMBERS

FRED C. ALBERTSON, *Associate Professor*
Ph.D. (1980), Bryn Mawr College [2000]
LORELEI H. CORCORAN, *Associate Professor*
Ph.D. (1988), University of Chicago [2003]
CALVIN FOSTER, *Associate Professor*
M.F.A. (1974), Auburn University [2002]
LAWRENCE JASUD, *Associate Professor*
M.F.A. (1980), Ohio State University [2002]
ROBERT E. LEWIS, *Professor*
M.F.A. (1971), Ohio University [2000]
WENDY McDARIS, *Associate Professor*
M.F.A. (1990), Memphis State University [2003]
LARRY E. McPHERSON, *Associate Professor*
M.A. (1978), Northern Illinois University [1999]
GREELY MYATT, *Associate Professor*
M.F.A. (1980), University of Mississippi [2002]

CAROL J. PURTLE, *Professor*

Ph.D. (1976), Washington University [2000]

WAYNE SIMPKINS, *Associate Professor*

M.F.A. (1974), University of California, Santa Barbara [2000]

NILES A. WALLACE, *Associate Professor*

Ph.D. (1974), Alfred University [2000]

JAMES WATKINS, *Professor*

M.A. (1965), University of Alabama [2000]

NANCY SHARPE WHITE, *Associate Professor*

M.F.A. (1974), Alfred University [2000]

ASSOCIATE MEMBERS

CAROL CROWN, *Associate Professor*

Ph.D. (1975), Washington University [2000]

PAUL E. McKEEGAN, *Associate Professor*

Ed.D. (1975), Ball State University [2000]

DAVID R. POHL, *Associate Professor*

M.S. (1986), Florida State University [2002]

MICHAEL R. SCHMIDT, *Assistant Professor*

M.G.D. (1994), North Carolina State University [2001]

ELEANOR K. SIEGEL, *Assistant Professor*

Ph.D. (1995), University of Texas, Austin [2001]

- I. The Department of Art offers the Master of Arts degree with a major in Art History and concentrations in (1) Egyptian Art and Archaeology, and (2) General Art History; and the Master of Fine Arts with a major in Art, with concentrations in Ceramics, Graphic Design, Interior Design, Painting, Printmaking/Photography, and Sculpture. The Department of Art is a fully accredited institutional member of the National Association of Schools of Art and Design.

II. M.A. Degree Program

A. Program Admission

1. Admission to the Graduate School.
2. For the concentration in General Art History, an undergraduate course in each of the major areas of art history is desirable: ancient, medieval, renaissance, baroque, and modern. For the concentration in Egyptian Art and Archaeology, an undergraduate major in Egyptology, art history, anthropology, history, classical studies, or archaeology is desirable. If, after evaluation of the student's transcript, the art history faculty perceives a deficiency in these areas, the student may be required to successfully complete courses that will not count toward the Master of Arts degree.
3. A letter of intent, explaining the applicant's motivation and objectives in pursuing a graduate degree in art history.
4. A sample of undergraduate writing, preferably in art history.
5. Two letters of recommendation, at least one of which should be from a college faculty member who knows the student well.

B. Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy upon the completion of 15 semester hours of graduate work. All candidacy requirements listed below must be satisfied before registering for more than 15 hours of coursework at the graduate level. To be approved for admission for candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale.
2. Removed all departmental prerequisite requirements.
3. A planned degree program which meets all departmental and graduate school requirements.
4. The qualifying examination in art history shall be successfully completed and identified deficiencies removed. For a concentration in General Art History, this test is an entry-level slide identification examination covering key monuments of Western art from ancient through modern times. For a concentration in Egyptian Art and Archaeology, this test is an essay examination based on a reading list obtainable from the graduate adviser.
5. Knowledge of an appropriate foreign language must be demonstrated by the student. Generally speaking, advanced studies in art history require proficiency in at least one foreign language, depending upon the area of concentration selected by the student. Foreign language proficiency must be demonstrated by successfully passing an examination administered by the Department of Art; this examination should be taken during the first year of graduate study. This examination is set up so that each student is given a standard amount of time to translate in writing with the aid of a dictionary selected passages from scholarly articles in the student's field. For a concentration in Egyptian Art and Archaeology, French or German is preferred.
6. The student must establish an overall history of satisfactory ratings in periodic review, a semi-annual evaluation of each student's general level of achievement by all area graduate faculty. Forms are available for perusal in the Art Department Office. Students with assistantships

are required to take 12 hours each semester, 3 of which may be chosen from ART 7880 or 7881.

C. Program Requirements

1. A total of 30 semester hours including the thesis.
2. The completion of ARTH 6123 and 7130.
3. A minimum of 18 semester hours in art history (not including the required ARTH 6123, 7130 or any hours in ARTH 7996).
4. Twenty-one semester hours of 7000 level courses including no more than 3 credit hours for the thesis. (see "Thesis Credit" in Section 2.)
5. Up to 6 hours of elective credit outside the field of art history may be selected with the permission of the adviser.
6. The satisfactory completion of a comprehensive examination and an acceptable thesis, with presentation and defense.

III. M.F.A. Degree Program

A. Program Admission

1. Portfolio. Approval by the area graduate committee of the applicant's creative work as specified below:
 - a. Graphic Design. 20-30 slides of original and/or printed works. Submission of original work may be requested.
 - b. Interior Design. 20-30 slides of drawings, perspectives, renderings, plans, elevations, etc.
 - c. Ceramics, Painting, Printmaking/ Photography, and Sculpture. 20-30 slides of work mainly in the applicant's concentration area plus: some slides of drawings and optional other media. Include additional views of 3D pieces. Submission of original work might be requested.
2. Letters of recommendation. Letters from two persons familiar with the applicant's creative activity but who are not members of the area graduate committee. If applying for a teaching assistantship, each recommendation should contain reference to the applicant's teaching ability. Graphic design applicants are required to submit official reference forms.
3. Statement. A brief, personal statement of professional ambitions, intended concentration area, other special creative interests, and outline of previous professional experience.
4. Entrance Examination. In general, a verbal score of 500 and a quantitative score of 450 or more on the GRE, or a score of 40 on the MAT, is desired for graphic design applicants.
5. Deadline. Applications for any given semester including summer sessions are normally decided during the regular academic year (approximately November 30th for Spring semester and April 30th for Summer and Fall entrance). Late applications will be considered however, if space and faculty are available.
6. Address. Send slides, work, letters of recommendation, and statement to:
Coordinator of Graduate Studies
Department of Art
The University of Memphis
Memphis, Tennessee 38152
7. Conditional Admission. The area graduate committee can award conditional admittance after reviewing the application with the provision that the student complete undergraduate prerequisites or otherwise correct deficiencies.
8. Students with assistantships are required to take 12 hours each semester, 3 of which may be chosen from ART 7880 or 7881.

B. Program Prerequisites

1. Previous education and experience. Normally admission to the graduate program will require an undergraduate major in the applicant's concentration area. (See concentration areas listed above.) A baccalaureate degree from an accredited institution is required with not less than 70 semester hours of art of which 12 hours should be in art history and 18 hours (24 hours for Graphic Design and Interior Design) must be in the concentration studio courses. Exceptions to the above requirements will be considered, however, when the portfolio and professional experience warrant it.
2. Transfer credit. Any applicant who holds an M.A. degree in studio art from another institution may transfer up to a maximum of 30 semester hours credit in art earned for that degree to apply toward the M.F.A. degree.

C. Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy during the semester in which the student completes 30 hours of graduate work. To be approved for admission to candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale.
2. Removed all departmental prerequisite requirements.
3. A planned degree program which meets all departmental and graduate school requirements.
4. The student must establish an overall history of satisfactory ratings in periodic review (a semi-annual evaluation of each student's general level of achievement by a committee of area graduate faculty) and be approved for candidacy by that committee.

D. Program Requirements

1. A total of 60 semester hours including a thesis of 6 semester hours in the student's area of concentration.
2. A total of 36 semester hours of studio art, excluding the thesis, with a minimum of 24 semester hours in the student's area of concentration.
3. Forty-two semester hours of 7000 level courses.
4. A total of 9 semester hours in art history.
5. A total of 9 semester hours of electives.
6. Students with a concentration in graphic design are required to take at least 12 semester hours of ART 7040 and 7240 combined.
7. Residency requirement for Graphic Design and Interior Design: The student must commit to full-time study for a minimum of two successive semesters after admission to either design concentration to fulfill the residency requirement.
8. Students from the concentrations of Ceramics, Painting, Photography, Printmaking, and/or Sculpture must enroll in Art 7651 (1 cr. Hr.) when also enrolled in a 6000 or 7000 level studio course.
9. Satisfactory grade on a written comprehensive examination, with follow-up oral examination at option of examining committee.
10. Thesis (exhibition) to be approved by a faculty committee with the member under whom thesis was prepared as chair. For graphic design candidates, a written thesis accompanied by appropriate visual documentation is required.

ART (ART)

010-19. Special Topics in Studio Art. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated to a maximum of 9 hours when topic varies.

020-29. Special Topics in Art Education. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated to a maximum of 9 hours when topic varies.

211. Writing and the Design Process. (3). Focus on synthesis of verbal and visual problem-solving methods and use of writing as an integral phase of design process. PREREQUISITES: ART 3213 and 3222 or permission of instructor.

221. Graphic Design for Print Communications. (3). Practical problems in the areas of publication, information, corporate, and promotional design. PREREQUISITES: ART 3213 and 3222 or permission of instructor.

222. Interactive Multimedia for Graphic Design. (3). Introduction to web-based, electronic media in graphics design, impact of electronic interface on visual communication; emphasis on visual design of narrative, commercial, editorial and/or educational multimedia presentations on computer. PREREQUISITES: ART 2223 and Admission to Graphic Design concentration.

223. Specialized Studies in Graphic Design. (3-12). Advanced instruction in either electronic imaging, typography, and publication design, 3-dimensional design, corporate and promotional design, or information graphics. May be repeated to a maximum of 12 hours when topics vary.

224. History of Graphic Design. (3). Cultural, theoretical, and stylistic aspects of major movements in field of graphic design in Europe and America from the Industrial Revolution to present. PREREQUISITE: Admission to Graphic Design concentration.

332. Visual Design Business Practices. (3). Introduction to current business, legal, and trade practices relating to the profession of graphic design.

333. Design Practice Studio. (3). Faculty supervision on projects for institutional and corporate clients; development of publications, exhibits, signage and other graphics, and participation in professional design process from project inception to completion. May be repeated a maximum of 12 hours with approval of the adviser.

338. Interior Design Studio III. (3). A continuation of Art 6237 with further advanced studio assignments in commercial interior design studied through lectures and design projects. PREREQUISITES: ART 334 and 3235.

339. Interior Design Business Practices. (3). History and organization of interior design profession, study of business methods, and practices, and formulation of resume and design portfolio. PREREQUISITE: ART 3234

40. Interior Design Internship. (3). Supervised apprenticeship in interior design industry. Placement requires approval of interior design faculty. PREREQUISITE: ART 3234.

6241. Nineteenth Century Furniture Analysis. (3). Identification of antique American furniture by period and style. Research involves actual furniture in a house museum collection.

6321. Drawing and Painting I. (3). An advanced course in drawing and painting methods with emphasis on transparent watercolor.

6322. Drawing and Painting II. (3). A continuation of Art 6321 with attention given to various mixed media.

6331. Painting III. (3). Advanced problems in oil painting, presupposing that the student has mastered basic techniques and is ready for a more experimental approach to the subject.

6332. Painting IV. (3). A continuation of Art 6331 with emphasis on development of a personal style.

6351. Advanced Printmaking I. (3). Specialization in one or two printmaking media with emphasis on development of personal imagery and technical skills.

6352. Advanced Printmaking II. (3). Advanced work on one or two printmaking media with continued development of personal imagery and advanced technical skills.

6353. Computer Imaging in Printmaking and Photography I. (3). Use of digital imaging in one of several output options including lithography, screen printing, etching, silver and non-silver photographic processes; emphasis on personal expression. PREREQUISITES: Computer course and either ART 2351 or 2701.

6354. Computer Imaging in Printmaking and Photography II. (1-3). Advanced project using digital imaging; proposal for study to be approved in advance; emphasis on personal expression. May be repeated to a maximum of six hours. PREREQUISITE: ART 6353 or permission of instructor.

6410. Art Education Independent Study. (1-3). Theoretical and pragmatic ideas relevant to teaching of art. May be repeated to a maximum of 6 hours.

6511. Sculpture IV. (3). Advanced work in various sculptural media.

6512. Sculpture V. (3). A continuation of ART 6511 with emphasis on personal expression.

6521. Ceramics III. (3). Introduction to pottery-making, including hand forming and production processes using clays, plaster, and cements.

6522. Ceramics IV. (3). A continuation of ART 6521 offering further study in pottery-making and glazing, emphasis on design.

6621. Workshop in Art I. (1-3). Specific art problems as they apply to individual student; emphasis on basic art concepts and creative experience.

6622. Workshop in Art II. (1-3). Continuation of ART 6621, providing study of problems appropriate to needs of individual student.

6641. Study and Travel in Art. (3 or 6). Travel to important art areas of the world with specialized study under direction of departmental faculty member. Research problem assigned and evaluated by major professor required.

6650. Professional Art Practices. (3). Development of skills needed for success as practicing professional artist, including portfolio preparation and presentation, marketing, contracts, copyrights, and alternative art careers.

6701. Color Photography. (3). Exploration of photographic perception in color. Survey of the history and aesthetics of color photography. Techniques of color photography with emphasis on color printing. PREREQUISITE: ART 2702 or ART 6002 or permission of instructor.

6702. Photographic Materials and Processes. (3). Primarily an advanced technical course exploring the creative potential in various contemporary photographic materials, processes and techniques. Emphasis is on aesthetic application of those materials and techniques. PREREQUISITE: ART 2702 or ART 6002 or permission of instructor.

6703. Alternative Photographic Processes. (3). Creative potential of archaic and non-traditional photographic processes such as Cyanotype, Gum Bichromate and Kwik-Print. PREREQUISITE: ART 2702 or permission of instructor.

6704. Photographic Lighting. (3). Advanced theory, technique, and equipment used by professional photographers for black and white and color. Emphasis on aesthetic application in actual practice. PREREQUISITE: ART 2702 or permission of instructor.

7010-19-8010-19. Special Topics in Studio Art. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated to maximum of 9 hours when topics varies.

7020-29-8020-29. Special Topics in Art Education (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated to maximum of 9 hours when topics varies.

7040. Problems in Graphic Design: Methodology and Practice (3). Issues, theory, and methodology for graphic designers; research of assigned topic, class discussions, and studio projects. May be repeated for maximum of 12 hours when topics vary.

7200-8200. Photography Seminar. (3). Self-assigned visual/conceptual photographic problem in which journal is kept; group critiques and some seminar activities. May be repeated for a maximum of 6 hours.

7201-8201. Advanced Research Photography. (3). Independent work and research in photography. May be repeated for a maximum of 9 hours. **PREREQUISITE:** Permission of instructor.

7240. Visual Communication Research Topics. (3). Group discussion and criticism of individual study problems; emphasis on independent studio research projects as related to general topic in visual communication. May be repeated upon recommendation of advisor.

7330-8330. Studies in Two-Dimensional Media. (1-12). Exploration of an original visual arts idea in two-dimensional media. May be repeated several times depending upon recommendation of adviser.

7420. Methods for K-12 Art Instruction. (2) Instructional planning, implementation, and evaluation applied to elementary and secondary school art programs.

7550-8550. Studies in Three-Dimensional Media. (1-12). Exploration of an original visual arts idea in three-dimensional media. May be repeated depending upon recommendation of adviser.

7640. Studies in Computer Animation. (3). Advanced techniques and principles of visual communication in the video animation format. **PREREQUISITE:** permission of instructor.

†7651. Graduate Studio Seminar. (1). Student presentation and discussion of current studio work in ceramics, painting, photography, printmaking, and/or sculpture courses at the 6000 or 7000 level. May be repeated one per semester to a maximum of 12 hours.

7660-8660. Directed Individual Study. (1-12). Individual investigation of special research problems or projects. May be repeated upon recommendation of adviser.

7710. Independent Studies in Black and White Photography. (3). Independent exploration of original black and white photographic art ideas and studio techniques. May be repeated for maximum of 6 hours upon recommendation of adviser.

7711. Advanced Photography Seminar. (3). (6711) Emphasis on finding a personal direction within the student's work, pursuing that direction, and discussing it in class critiques. **PREREQUISITE:** ART 7003 or permission of instructor.

7712. Photography Portfolio Seminar. (3). (6712) Student must produce a book of photographs or portfolio (bound by student) which represents a coherent, in-depth picture statement. **PREREQUISITE:** ART 7711.

7770. Studies in Mixed Media. (1-12). Explorations of an original visual arts idea in mixed media. May be repeated upon recommendation of adviser.

†7880-8880. Teaching Art for Graduate Assistants (1-3). Overview and practical demonstrations of the art of teaching art. Required of all graduate teaching assistants. May be repeated.

†7881-8881. Workshop in Art for Graduate Assistants (1-3). Presentation of research methods and scholarly output by faculty, graduate students, and visiting scholars. May be repeated.

†7996 Thesis. (1-6). Preparation and defense of a thesis prepared under direction of major professor. Studio Art thesis requires an exhibition.

†Grades of S, U, or IP will be given.

ART HISTORY (ARTH)

6030-39. Special Topics in Art History. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated to a maximum of 9 hours when topic varies.

6111. Art and Archaeology of Egypt. (3). Pre-dynastic to Late Period.

6112. Egyptian Art and Archaeology in the Old and Middle Kingdoms. (3). Art, architecture, and archaeology, 3000-1500 B.C.

6113. Egyptian Art and Archaeology in the New Kingdom and Late Period. (3). Art, architecture, and archaeology, 1500 B.C. to 642 A.D.

6121. Ancient Art of the Near East. (3). Architecture, sculpture, painting, and the minor arts in Mesopotamia, Anatolia, and Syria/Palestine.

6123. Greek Art. (3). Architecture, sculpture, and painting from the Bronze Age to the end of the Hellenistic period.

6124. Roman Art. (3). Architecture, sculpture, and painting from Etruscan Rome to the fall of the Empire.

6125. Art and Archaeology of Pompeii. (3). Pompeii's excavation, art, artifacts, and architecture in reconstructing ancient Roman daily life.

6129. Studies in Ancient and Medieval Architecture. (3). Selects topics comparing the architecture of ancient Egypt, the classical world, and medieval Europe.

6130. Art of the Medieval World. (3). Architecture, sculpture, and painting, including manuscript illumination, of the Middle Ages. Includes Western European and Byzantine traditions.

6131. Art of the Early Middle Ages. (3). Advanced study of the architecture, sculpture, and painting of early medieval period.

6134. Art of the High Middle Ages (3). Advanced study of the architecture, sculpture, and painting, including manuscript illumination, stained glass, and ivories of Romanesque and Gothic periods.

6141. Art of the Early Renaissance in Italy. (3). Survey of the architecture, sculpture, and painting of Italy, 1300-1510.

6142. Northern Renaissance Art. (3). Fifteenth century art in Northern Europe with emphasis on panel painting, manuscript illumination and printmaking.

6143. Art of the High Renaissance in Italy. (3). Sixteenth century art in Italy, highlighting the works of Michelangelo, Raphael, Titian, and the Mannerists.

6146. Baroque Art. (3). Historical study of the architecture, sculpture, and painting produced in Europe during the seventeenth century.

6148. Neo-classicism and Romanticism. (3). Western European art, ca. 1760-1850, emphasizing painting, sculpture, and art theory. **PREREQUISITE:** ARTH 2102 or permission of instructor.

6149. Realism and Impressionism. (3). Western European art, ca. 1850-1880, emphasizing painting, sculpture, and art theory. **PREREQUISITE:** ARTH 2102 or permission of instructor.

6152. Early Modern Art. (3). Movements in Western art and art theory, 1880-1905, that are the foundation of 20th century modernism, especially Symbolism and Post-Impressionism. **PREREQUISITE:** ARTH 2102 or permission of instructor.

6153. Cubism through Surrealism. (3). Modern European art movements from ca. 1905 to World War II. Covers Cubism, Expressionism, Surrealism. **PREREQUISITE:** ARTH 2102 or permission of instructor.

6155. High Modern Art. (3). American and European art and art theory, emphasizing the development of modernism. **PREREQUISITE:** ARTH 2102 or permission of instructor.

6157. Contemporary Art. (3). Historical movements in art, 1968 to the present. **PREREQUISITE:** ARTH 2102 or permission of instructor.

6158. Modern Architecture. (3). 19th century styles, 20th century masters, contemporary developments in architecture, including historic preservation.

6160. Architecture and Nature. (3). Survey and analysis of spaces, variety of cultures from world history where relationship between natural and the built environment is healthy.

6162. Latin American Art. (3). Hispanic arts of the Americas from 15th to the present, considered in relation to Iberian and Indian traditions.

- 163. Pre-Columbian Art. (3).** A survey of the ancient arts of Mexico, Central America, and South America from c. 1000 B.C. to European contact.
- 166. Art of the United States. (3).** (6167, 6168). American painting, sculpture, and art theory from Colonial period to 1945.
- 181. Traditional Arts of Africa, Oceania, and North America. (3).** Survey of arts created by Native Americans of U.S. and Canada, peoples of sub-Saharan Africa, and Pacific islands, examined in relation to their cultural context and heritage.
- 1880. Museums in Society. (3).** (Same as ANTH 6380). History of museums and how they function in society; development of major collections and roles of museums as centers of research, education, and interpreters of social values.
- 1881. Art Curatorial Techniques. (3).** Concentrates on curatorial responsibilities and functions, receiving and shipping methods, registration, physical and environmental security, research, conservation, and a study of the art market and publications.
- 1882. Professional Practices in Museums. (3).** (Same as ANTH 6382). Basic aspects of museum organization; roles of director and trustees; responsibilities of professional staff including registrars and curators; scope of museum education programs; presentations by museum professionals.
- 1884. Museum Internship. (3-6).** Approved internship with cooperating museum or gallery, emphasizing curatorial program and/or operational duties. **PREREQUISITES:** Permission of the instructor and one of the following or the equivalent: ARTH 6380, 6381, 6382 or 6384. Repeatable for maximum of 6 hours.
- 721. History of Photography I. (3).** Historical and critical issues from photography's prehistory to World War I.
- 722. History of Photography II. (3).** Historical and critical issues in photography from World War I to present.
- 830-39-8030-39. Special Topics in Art History. (1-3).** Topics are varied and announced in *Schedule of Classes*. May be repeated to maximum of 9 hours when topics varies.
- 10. Advanced Individual Study in Art History. (3).** Historical periods of art history with emphasis on individual research. May be repeated for credit when topic varies. **PREREQUISITE:** permission of instructor.
- 15. Middle Egyptian I. (3).** Grammar and translation of hieroglyphs.
- 16. Middle Egyptian II. (3).** Readings in hieroglyphs. **PREREQUISITE:** ARTH 7115 or equivalent
- 17. Middle Egyptian Literature. (3).** Readings and translations of major literature of Ancient Egypt. **PREREQUISITE:** ARTH 7116 or equivalent.
- 18. Middle Egyptian Historical Texts. (3).** Readings and translations of ancient Egyptian works of history. **PREREQUISITE:** ARTH 7116 or equivalent.
- 19. Late Egyptian. (3).** Readings in literature and other texts. **PREREQUISITE:** ARTH 7116 or equivalent.
- 20-8120. Medieval Art. (3-9).** Selected areas or specific problems in early Medieval, Romanesque, or Gothic Art. May be repeated upon recommendation of adviser.
- 21-8121. Ancient Art. (3-9).** Selected areas or specific problems in Egyptian, Near Eastern, Greek, or Roman Art. May be repeated upon recommendation of adviser.
- 25. Egyptian Art and Archaeology. (3).** Topics and problems in Egyptian art and archaeology. May be repeated upon recommendation of adviser.
- 830-8130. Art History Methods and Professional Practice. (3).** History of the discipline along with current research methods. Students develop research presentations in oral and written formats.
- 810-8140. Renaissance Art. (3-9).** Selected areas or specific problems in Renaissance Art. May be repeated upon recommendation of adviser.
- 810-8150. Nineteenth Century Art. (3-9).** Selected areas or specific problems in Nineteenth Century Art. May be repeated upon recommendation of adviser.

7152-8152. Twentieth Century Art. (3-9). Selected areas or specific problems in twentieth century art. May be repeated upon recommendation of adviser.

7165-8165. American Art: Ancient to Modern. (3-9). Selected areas or specific problems in Pre-Columbian, North American Indian, Spanish Colonial, or American art. May be repeated upon recommendation of adviser.

7660-8660. Directed Individual Study. (1-12). Individual investigation of special research problems or projects. May be repeated upon recommendation of adviser.

†7880-8880. Teaching Art History for Graduate Assistants (1-3). Overview and practical demonstrations of the art of teaching Art. Required of all graduate teaching assistants. May be repeated.

†7881-8881. Workshop in Art History for Graduate Assistants (1-3). Presentation of research methods and scholarly output by faculty, graduate students, and visiting scholars. May be repeated.

†7996 Thesis. (1-6). Preparation and defense of a thesis prepared under direction of major professor. Studio Art thesis requires an exhibition.

†Grades of S, U, or IP will be given.

Communication

LAWRENCE R. FREY, Ph.D., *Chair*
Room 143 Theatre and Communication Building

JOHN A. CAMPBELL, Ph.D.,
Coordinator of Graduate Studies
(901) 678-2565

E-mail: ssmith@memphis.edu
www.people.memphis.edu/~commdept

MEMBERS

- DAVID L. APPLEBY, *Professor*
M.F.A. (1979), Temple University [2002]
- JOHN B. BAKKE, *Professor*
Ph.D. (1966), University of Iowa [2000]
- MARVIN R. BENSMAN, *Professor*
Ph.D. (1969), University of Wisconsin [2000]
- JOHN A. CAMPBELL, *Professor*
Ph.D. (1968), University of Pittsburgh [2002]
- THOMAS J. DARWIN, *Assistant Professor*
Ph.D. (1991), University of Texas [2001]
- M. ALLISON GRAHAM, *Professor*
Ph.D. (1978), University of Florida [1999]
- JOANN KEYTON, *Associate Professor*
Ph.D. (1987), The Ohio State University [2005]
- STEVEN J. ROSS, *Professor*
M.A. (1974), New York University [2002]
- LINDA (LYNNE) M. WEBB, *Associate Professor*
Ph.D. (1980), University of Oregon [1999]

ASSOCIATE MEMBERS

- ROXANA L. GEE, *Associate Professor*
M.A. (1973), Memphis State University [2002]
- KATHERINE G. HENDRIX, *Assistant Professor*
Ph.D. (1994), University of Washington [2001]
- WALTER G. KIRKPATRICK, *Associate Professor*
Ph.D. (1974), University of Iowa [2000]
- DAVID GRAY MATTHEWS, *Assistant Professor*
Ph.D. (1993), Pennsylvania State University [2000]
- ROBERT W. McDOWELL, *Associate Professor*
Ed.D. (1991), Memphis State University [2004]
- BROOKE L. QUIGLEY, *Assistant Professor*
Ph.D. (1990), University of Washington [2002]

I. Preamble

- A. A Master's Degree in Communication from The University of Memphis prepares students to pursue a Ph.D. in Communication or provides opportunity for enrichment in careers as professional communicators. Students have a choice of two concentrations.
- B. The concentration in communication grounds students in dominant rhetorical and communication theories and methods. Students can choose to study communication in interpersonal, small group, organizational, mass, political, and cultural contexts.
- C. The concentration in film and video production combines technical instruction with courses in both motion picture and traditional communication studies. The approach to media practice is broad enough to address the needs of the independent artist as well as of the student who seeks to enter the industry.

II. M.A. Program**A. Admissions Criteria**

1. All students applying for admission are required to submit Graduate Record Examination (GRE) verbal and quantitative scores. In addition to meeting university admission requirements, the Department uses the following criteria in consideration of applications: (a) in general, a verbal score of 500 and a quantitative score of 450 or more on the GRE; (b) an undergraduate GPA of 3.0, or a GPA of 3.2 for the last 60 credit hours, or a GPA in the major of 3.25; (c) if English is a second language, a TOEFL score of 600 (or 250 on the computer-based TOEFL) and a TSE score of 280. If the candidate does not meet the above criteria, but has an undergraduate GPA for the last 60 hours of at least 2.7 and a combined GRE of at least 900 (TOEFL and TSE scores remain the same), the application will be referred to the departmental graduate studies committee for consideration. In such cases, additional materials may be sought from the applicant. Candidates with a combined GRE below 900 or a GPA for the last 60 hours of undergraduate work below 2.7, or, if English is a second language, a TOEFL score below 600 or a TSE score below 280, will not be admitted.

B. Initial Graduate Advising

1. After being notified by the Graduate School that he or she has been accepted as a graduate student in our department, the student will meet with the Coordinator of Graduate Studies, or the Department Chair, who will assign the student to a temporary advisor in his or her area of interest. That advisor will assist the student in registering for the first semester.
2. Before the first semester has been completed, or before nine hours of part-time work has been completed, the student will form a committee consisting of at least two members of the graduate faculty one of whom, by request of the student and the consent of the faculty member, will serve as Committee Chair. These two members will assist the student in identifying a third member to be added before the completion of 18 hours. A minimum of two of these must be from the Department of Communication.

C. Formation and Conduct of Graduate Committees

1. Role and Duties of Chair and Committee: All decisions pertaining to a student's program should be approved by a consensus of the committee including meeting to approve additions or changes to the plan of study and/or to approve the content of independent studies. Whether the student chooses to culminate his or her studies with a thesis, practicum, or special project, the proposal for this must be approved by the whole committee; the final result should be reviewed by them and found acceptable.

D. Program Requirements

1. Successful completion of a minimum of 36 hours of graduate courses, including thesis, practicum, or special project; 70% of the minimum must be at the 7000 level or above. Permission to pursue the thesis or practicum option must be obtained from the student's advising committee.
2. All students choosing the non-thesis option must complete three credits of 7993 or 7994, Special Problems, in their last semester.
3. All students must successfully complete the following core courses: 7321 Communication Theory and 7350 Rhetorical Theory.
4. All students with a concentration in Film and Video Production must take 3 credits of 7892, Film and Video Production, before beginning their practicum or final special problem.
5. Up to nine hours outside the department may be applied to the minimum hour requirement with the approval of the student's advisory committee.
6. Up to six semester hours earned at another institution may be applied to the minimum hour requirement with the approval of the student's advisory committee.

E. Comprehensive Exams

1. All candidates must pass a written and oral comprehensive examination during or after their last semester of course work.
2. The exam is in two parts, written and oral.
 - a. A pass, or conditional pass, on the written is necessary for admission to the oral.
 - b. The quality of the exam as a whole is determined at completion of the oral.

F. Graduate Assistantships

1. Graduate assistantships are available and are awarded on a competitive basis within the department. Assistantships are normally renewed

for one year depending upon the performance of assistantship duties and the progress being made towards a degree.

2. All assistants must register for twelve hours of credit. It is advised that three of these be chosen from COMM 7001, 7001, or 7003.

G. Theses, Practicums, and Special Projects

1. Students may choose either the thesis or non-thesis option. This decision should be made in consultation with their advisory committee.
2. *Thesis Option*
 - a. A thesis or practicum (production thesis) of 3 to 6 semester hours may be presented as partial completion of degree requirements.
 - b. Upon completion of the thesis, the student must successfully complete an oral defense administered by the student's committee. The thesis must be acceptable to all members of the committee and recommended to the Graduate School after the successful defense.
 - c. Permission to pursue the practicum option will be granted by the student's committee upon approval of a detailed proposal.
2. *Non-Thesis Option*
 - a. In lieu of a thesis, the student may choose to complete an independent capstone project under the supervision of a graduate faculty member. Registration for this special project must be approved by the committee and may not occur prior to the last semester of course work.
 - b. Special project provides an opportunity for students to demonstrate mastery of their areas of concentration and their ability to work independently as a special project is designed and carried out solely by the student. The project may take one of several forms: an original screenplay, a rhetorical essay or quantitative study much like a convention manuscript, or a film or video production. Upon its completion, the special project should be presented to the committee for approval by all members of the committee.

H. Time Limitation

All requirements for the degree must be completed in six calendar years.

I. Departmental M.A. Guidelines

Additional details and information are available in the departmental M.A. Guidelines given to students following admission.

III. Ph.D. Program**A. Program Admission**

The Department uses the following criteria in consideration of applications

1. Fulfillment of university requirements for admission to the graduate school and a verbal score of 500 and a quantitative score of 450 or more on the GRE. If English is a second language, a TOEFL score of 600 (or 250 on the computer-based TOEFL) and a TSE of 280 is required.
2. MA or other advanced degree from an accredited institution. The MA thesis or other evidence of scholarly writing must be provided with the application.
3. Three letters of recommendation submitted by persons competent to judge the applicant's academic record and potential for advanced graduate work.
4. Transcript of prior academic work at the undergraduate and graduate levels. Individual copies should be sent to the Graduate School and to the department's director of graduate studies. A minimum 3.5 graduate GPA for the MA (on a scale of 4.00) is expected.
5. A vitae/resume
6. A statement of purpose detailing the student's reasons for seeking the degree.

B. Retention Requirements

A student will be retained continuously in the program within university time limits until completion of the degree providing the following conditions are met.

1. It is expected that students maintain a GPA of 3.5 throughout the program. However, should the student's GPA fall below 3.5, nine (9) semester hours will be allowed to correct the deficiency. At the request of the student's committee and at the discretion of the department chair and the graduate policies committee this period may be extended nine (9) additional semester hours. The student must have obtained a GPA of 3.5 before registering for dissertation credits. A student who falls behind the satisfactory progress schedule may be put on probation. The Assistantship is forfeited if a student is put on probation.
2. After being notified by the Graduate School that he or she has been accepted as a graduate student in our Department, the student will meet with the Coordinator of Graduate Studies, or the Department Chair, who will assign the student a temporary advisor in the student's area of interest. That advisor will then assist the student in registering for the first semester.
3. Before registering for courses beyond 9 hours of study, the student will select a temporary committee of at least 3 members. That committee will assist the student in registering for coursework beyond 9 hours.
4. Before registering for courses beyond 18 hours of study the student must form his or her Advisory Committee consisting of a chair and at least three other members, of which one must be from outside the Department of Communication. Three members of the committee must be members of the Graduate Faculty and the Chair must be a faculty member. See Graduate catalogue for faculty listings.
5. Comprehensive exam. The exam will consist of a written and an oral portion. At the completion of the students' course work (minimally 4 hours) the student shall take a comprehensive exam over the area

covered in the student's program. The content of the examination for each student will depend on the nature of the student's program and the area of concentration. The precise distribution of the 10 hours of the written exam and the areas which it will cover will be determined by the student's committee within the following guidelines:

- a) At least 2 hours of the written exam will be devoted to theoretical issues;
- b) At least 2 hours to research tool or analytic specialty issues;
- c) The remaining hours will be divided among themes pertinent to the students' specialization, including cognate areas of study; and
- d) When appropriate, questions may be solicited from other faculty members to supplement those provided by the Committee members.

Preparing for the Comprehensives. Prior to the comprehensive exams students will take 6 hours of COMM 8992 Major Area Paper. This independent investigation, approved in advance by the student's committee, leads to the preparation of a publishable paper. This course is counted towards degree requirements. The Comprehensive Examination is taken at the end of the semester in which COMM 8992 is scheduled. The Comprehensive Examination, which is both written and oral, is the primary basis on which the faculty of the Department determine whether the student is ready to embark upon the program of research and writing culminating in the dissertation. The examination is administered by the Advisory Committee.

At the close of the oral portion, the Advisory Committee, after considering the quality of both oral and written responses, will determine the outcome. Students will not be allowed to take exams or submit a dissertation prospectus if they have any *Incompletes* outstanding in the approved program of study.

6. Dissertation Requirements

- a. Upon successful completion of the Comprehensive Examination, the student shall select a dissertation director and in consultation with the director invite three additional faculty members to serve as the students' dissertation committee.
 - b. Dissertation Proposal Defense. The student shall submit a proposal for the dissertation to the committee and defend the proposal before the committee. In order to be considered "making satisfactory progress," a candidate must have his/her prospectus approved within two semesters of completion of the comprehensive exams.
 - c. Dissertation Defense. The chair of the dissertation committee in coordination with the other members of the committee will schedule an oral defense of the completed dissertation. Upon approval of a majority of the dissertation committee, the dissertation will be submitted to the Graduate School and the degree awarded.
7. Departmental Ph.D. Guidelines. Additional details and information are available in the departmental *Ph.D. Guidelines* given to students after admission into the program.

COMMUNICATION (COMM)

011. Communication in Organizations. (3). Communication systems and problems in contemporary organizations with emphasis on the role of communication in corporate culture and in organizational change.

012. Health Communication. (3). Examination of the role of communication in health care; application of communication theory and practice to the health care context from provider-patient interaction to cultural influences on health.

013. Communication in Political Campaigning. (3). Forms and effects of communication between politicians and constituencies with emphasis on campaign rhetoric via the mass media, debates, model speeches, etc.

10-19. Special Topics in Communication Studies. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated for maximum of 9 hours when topic varies.

20-29. Special Topics in Film. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated for maximum of 9 hours when topic varies.

41. Interpersonal Communication. (3). Theory and research regarding one-on-one communication; effective practices for various interpersonal settings.

42. Small Group Communication. (3). Advanced study of group communication theory emphasizing group membership, member perceptions, group development, group process, and group outcomes

60. Great American Speeches. (3). Survey and analysis of speeches and speakers vital to social, political, and cultural movements in Western Civilization. Subjects may be drawn from ancient to contemporary times. May be repeated for maximum of 6 hours.

6373. Interracial Communication. (3). The social problems encountered in communication between blacks and whites. Readings, discussion, and field study on how prejudice, stereotypes, and self-concepts can affect communication. Exploration of rhetorical methods to minimize these problems.

6375. Intercultural Communication. (3). Focus on understanding communicative interaction between and among people with different national/cultural backgrounds and functioning more effectively in multicultural settings.

†6802. Internship. (1-3). Field studies in communication; supervised practical work with government institutions, private business, film company, or broadcast and electronic media firm; written analysis of experience required. May be repeated for a maximum of 6 semester hours. **PREREQUISITE:** Permission of instructor.

6810. Broadcast Regulation and Program Policy. (3). Effects of F.C.C. and other governmental regulations on broadcasting and electronic media management and operations; licensing, renewals, content control, politics, and copyright.

6811. Radio and Television Programming. (3). Analysis of individual program formats (with examples); use of this information along with ratings and other audience research to study the design of program schedules.

6812. Communications Law in the Performing Arts. (3). Artist, performer, management contractual relationships; acquisition, copyright and disposition of literary and audio-visual properties; production and distribution agreements; advertising law and other matters for TV, motion picture, radio, and stage businesses.

6822. Audio Production for Broadcasting and Film. (3). Intermediate principles and practices of audio (recording, editing, mixing, and design) with emphasis on film and video production. **PREREQUISITE:** Minimum grade of "C" in COMM 3824 or permission of instructor.

6824. Cinematography/Videography. (3). Art of visual interpretation with a strong concentration in the theory and techniques of lighting. Experience with professional film and video cameras and lighting equipment. **PREREQUISITE:** COMM 3824.

6825. Editing and Post-Production. (3). Aesthetics of continuity development in variety of editing styles; editing techniques and post-production procedures for both video and double system film. **PREREQUISITE:** Minimum grade of "C" in COMM 3824 or permission of instructor.

6831. Broadcast and Cable Sales and Advertising. (3). Relation of broadcasting and cable sales and advertising to networks, station representatives, and salespeople; role of sponsors, agencies, and allied groups.

6841. Television Workshop. (4). Production of television programming for local cablecasting. May be repeated for a maximum of 8 semester hours; repetition will not result in change of any grade previously given. **PREREQUISITE:** Permission of instructor.

6842. Television Studio Production II. (4). Advanced training in TV studio/multiple camera techniques. Extensive production work. **PREREQUISITE:** COMM 3842.

6850. Film History I. (3). (6852). Historical survey of motion pictures from medium's pre-history to 1940. Emphasis on narrative film.

6851. Film History II. (3). Historical survey of major movements, genres, and themes in narrative film from 1940 to 1960.

6853. Documentary Form in Film. (3). Development of non-fiction film as rhetorical and expressive form. Analysis of individual films, genres, and filmmakers.

6854. Documentary Form in Broadcasting. (3). History, theory, and criticism of non-fiction broadcasting, including docudrama and television documentaries.

6856. Women and Film. (3). Women as performers, viewers, subjects, and creators in American and international film.

6857. History of Broadcast and Electronic Media. (3). Comprehensive history of broadcast and electronic media as developed from 1895 to present.

6858. Contemporary Cinema. (3). Major themes and styles in international and American narrative film from 1960 to present.

6871. Broadcast and Cable Management. (3). Theories of management; special problems and situations confronting managers of broadcast and cable outlets, including personnel, engineering operations, programming, and sales functions. PREREQUISITE: COMM 3800.

6891. Producing and Directing for Film and Video. (3). Research and script preparation; budgeting and production management; working with actors and crew. PREREQUISITE: Minimum grade of "C" in COMM 3824 or permission of instructor.

6960. Documentary Writing. (3). Writing for nonfiction media.

6970. Screenwriting. (3). Writing for fiction film and television. Basic dramatic theory, narrative structure, characterization, dialogue, adaptation, and unique demands of audio/visual media.

†7001-8001. Teaching Techniques for Graduate Assistants. (1-3). Overview and practical demonstrations of the art of teaching oral communication. May be repeated. PREREQUISITE: Graduate teaching assistant status in Department of Communication.

†7002-8002. Graduate Symposium I. (3). An orientation to the department, the study of communication, and the communication profession.

7003-8003. Graduate Symposium II. (3). Presentation and discussion of scholarly research by graduate students and faculty. Review and discussion of issues central to the graduate program.

7013-8013. Seminar in Political Communication. (3). Study of research pertaining to variables in political communication, such as debates, commercials, consultants, ethics, coverage. Repeatable for 9 hours.

7210-19-8210-19. Special Topics in Communication Studies. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated for maximum of 9 hours when topic varies.

7321-8321. Communication Theory. (3). Theories, models, and approaches to study of communication.

7330-8330. Social Science Research in Communication. (3). An introduction to the research process and an overview of social science research methodology in the study of communication.

7331-8331. Seminar in Communication Theory. (3). Specific topics, issues, and research in communication theory. Repeatable for 9 hours.

7332-8332. Seminar in Communication Research. (3). Examination of particular methodologies in communication research. Content will vary in response to current issues in the field. Repeatable for 9 hours credit. PREREQUISITE: COMM 7330-8330.

7350-8350. Rhetorical Theory. (3). Development of rhetorical theory from c. 500 B.C. to present.

7362-8362. Seminar in Public Address. (3). Intensive study of selected topics in the analysis and criticism of public arguments. Emphasis on cross-cultural comparison of arguments and appeal in common rhetorical situations. May be repeated for a maximum of 6 credits.

7369-8369. Seminar in Organizational Communications. (3). Selected variables of organizational communication with emphasis on methods of analyzing and auditing communication within the organizational setting. Repeatable for 9 hours.

7371-8371. Rhetorical Criticism. (3). (6371). An examination of the nature, questions, perspectives, and explanatory aims of rhetorical criticism.

7374-8374. Independent Studies in Communication Arts. (1-3). Independent research in areas of special interest including rhetoric, radio, television, and film. PREREQUISITE: Permission of the instructor.

7432-8432. Quantitative Research Methods. (3). Survey of quantitative research in communication. Practical experience in collecting and analyzing quantitative information. PREREQUISITE: COMM 7330-8330.

7434-8434. Qualitative Research Methods. (3). Survey of qualitative research in communication. Practical experience in collecting and analyzing qualitative information. PREREQUISITE: COMM 7330-8330.

7450-8450. Seminar in Interpersonal Communication. (3). Selected examination of theory about one-on-one interactions, related research, and application of that theory and research in diverse interpersonal contexts. Repeatable for 9 hours.

7460-8460. Seminar in Group Communication. (3). Examination of the theoretical and methodological approaches to the study of group communication focusing on both the task and relational orientations of group interaction.

7472-8472. Organizational Culture and Change. (3). Examination of the wide variety of theoretical and methodological approaches to culture, identification of types of organizational cultures, and tracking cultural evolution.

7474-8474. Supervisory Communication and Leadership. (3). Examination of the communication issues, strategies, and concepts involved in supervisory communication effectiveness. Review of current research regarding supervision, leadership, and teams.

7612-8612. Classical Rhetorical Theory. (3). Examines the development of Greco-Roman rhetorical theory from the Sophists through Quintilian and Augustine.

7614-8614. Modern Rhetorical Theory. (3). Examines central documents in the western rhetorical tradition from the fifteenth through the nineteenth centuries.

7616-8616. Contemporary Rhetorical Theory. (3). Examines the relationship between rhetorical theory and contemporary philosophy, especially poststructuralism, neo-pragmatism, and hermeneutics.

7632-8632. Seminar in Rhetorical Criticism. (3). Examination of the principal modes of contemporary rhetorical analysis such as Neoclassical, Burkean, Feminist, Cultural/Critical, and Poststructuralist. Repeatable for 9 hours.

7802-8802. Seminar in Film Criticism. (3). Intensive study of selected periods, genres, or filmmakers with emphasis on independent research project. Repeatable for 9 hours.

7804-8804. Seminar in Media Theory and Criticism. (3). Major critical approaches to media form and content; emphasis on film and television. Repeatable for 6 hours.

7806-8806. Seminar: Trends in Mass Communication. (3). Critical issue or issues facing communications today. Topics will vary each time offered. May be repeated for a maximum of 6 credits.

7807-8807. Seminar: Mass Communication Theory. (3). Selected concepts of mass communication with special attention to variables, media, and tools in mass communication research.

7808-8808. Seminar: Mass Communication and Society. (3). Interrelationships between mass communications, the individual, and society. Topics will vary each time offered. May be repeated for a maximum of 6 credits.

7809-8809. Seminar in Communication History. (3). Selected topics in history of communication, including public address, film, broadcasting, and electronic media.

7811-8811. Seminar in Telecommunications Policy. (3). Social, economic, and legal issues relating to use and governance of telecommunications industries; emphasis on public policy options available and capability of existing policy-making institutions to mediate among conflicting international, national, and industry interests.

7892. Film and Video Production. (1-3). Workshop for film and video production. Students write, produce, direct, or assume crew responsibilities on productions. May be repeated for a maximum of 6 credits. See departmental guidelines for independent production requirements and procedures. PREREQUISITE: COMM 3824 or permission of instructor.

7991-8991. Seminar in Comparative Media. (3). To demonstrate through intensive analysis what happens to the form and content of creative work in its various adaptations: novel, condensation, stage, movie, and television. Open to all Theatre and Dance, Communication, and English majors.

7993-8993. Special Problems. (1-3). Directed individual investigation of special research projects not included in thesis.

†7994-8994. Special Problems. (1-3). (Same as Above).

†7995-8995. Production Practicum. (3-6). Creative performance or production project suitable for public presentation and/or a practical application. Project to be determined in consultation with and directed by the student's supervisory committee.

†7996. Thesis. (1-6).

8992. Major Area Paper. (3-6). Preparation of a manuscript-length paper as determined by the student's advisory committee. The top will be approved by the committee. The paper may be a literature review, original research study, or other scholarly work of a quality similar to published research literature.

†9000. Dissertation. (1-3). For students who have passed their comprehensive exam and have an approved prospectus to write their dissertation under the direction of their advisor.

†Grades of S, U, or IP will be given.

Journalism

JAMES REDMOND, Ph.D., *Acting Chair*
Room 300 Meeman Journalism Building

M. DAVID ARANT, Ph.D.
Coordinator of Graduate Studies
(901) 678-4784

E-mail: darant@memphis.edu
www.people.memphis.edu/~jourlib

MEMBERS

- E. W. (BILL) BRODY, *Professor*
Ed.D. (1982), Memphis State University [2000]
ELINOR K. GRUSIN, *Associate Professor*
Ph.D. (1987), Ohio University [2001]
DAN L. LATTIMORE, *Professor*
Ph.D. (1971), University of Wisconsin [1999]
SANDRA UTT, *Associate Professor*
Ph.D. (1983), Ohio University [2004]
WILLIAM JAMES WILLIS, *Professor*
Ph.D. (1982), University of Missouri [2001]

ASSOCIATE MEMBERS

- DAVID ARANT, *Associate Professor*
Ph.D. (1994), University of North Carolina at Chapel Hill [2000]
RICK FISCHER, *Associate Professor*
Ph.D. (1994), Southern Illinois University [2000]
JAMES REDMOND, *Associate Professor*
Ph.D. (1993), University of Colorado-Boulder [1999]

ADJUNCT MEMBERS

- DEBORAH M. CLUBB
M.S.J. (1977), Northwestern University [1999]
V. GERHARD BUTSCHI
Ph.D. (1995), University of Berne, Switzerland [1999]

The Department of Journalism offers the Master of Arts degree with a major in Journalism and concentrations in Journalism Administration and General Journalism.

M.A. Degree Program

Students in the M.A. program may take courses in advertising, journalism, and public relations in keeping with their needs and interest. This program is designed for those who anticipate completing doctoral programs, for practicing professionals, and for those who are planning career changes. Students should consult with the coordinator of graduate studies and with faculty advisers in designing individual curricula.

A. Program Admission and Prerequisites

Applicants to the program are evaluated as they apply and may be admitted for the fall or spring semesters or for the summer session. All applicants must meet admission requirements of the Graduate School plus the following admission standards set by the Journalism Department:

1. A grade-point average of at least 3.0 (A=4.0) in all course work. Admission with conditions may be granted in extenuating circumstances.
2. An undergraduate degree in journalism from an accredited postsecondary institution or another degree from an accredited institution plus significant professional experience in advertising, broadcasting, journalism, or public relations.
Candidates who fail to meet prerequisites may be admitted as special undergraduates or non-degree students and required to complete undergraduate course work to remedy their deficiencies.
3. A score of 480 on the Verbal component and a score of 420 on the Quantitative component of the Graduate Record Examination (GRE), or a score of 40 on the Miller Analogies Test (MAT). Applicants with lower test scores will be considered.
4. A statement of 500 to 1000 words indicating the academic program for which the individual is applying and specifying his or her career goals.

B. Program Requirements

1. **Credit hours.** Students may complete their degrees with (a) a minimum of 30 hours of graduate credit including a thesis, or (b) a minimum of 33 hours of graduate credit including a professional project, or (c) a minimum of 36 hours of graduate credit. All options require a comprehensive examination covering four core courses and culminating presentations to three-person faculty committees. All courses taken for graduate credit must be approved by the graduate faculty of the department. Student work must be completed at a level of performance satisfactory to the graduate faculty. Students must complete all journalism courses with a grade of 3.0 or better. Course work taken outside the department (other than as specified in the Journalism Administration concentration) must be approved by the student's adviser. Students in General Journalism are required to take two courses (6 hours) outside the department.
Students with graduate credit earned at another institution may petition to have it applied toward their degree requirements at The University of Memphis. Such credit is not transferred automatically and must be approved by faculty in the student's concentration. A maximum of six semester hours earned at another regionally accredited university may be applied toward the master's degree requirements at The University of Memphis.
2. **Comprehensive Examination.** Students must satisfactorily complete comprehensive examinations covering the four common core courses of JOUR 7025, 7050, 7075, and 7100. This examination must be taken within 12 months of completion of the last of these courses.
3. **Master's Thesis.** Students who anticipate continuing with doctoral study should complete an independent research project culminating in a master's thesis. On completion of a thesis, a student will take an oral examination that assesses the thesis and the student's broader awareness of theoretical and empirical issues in his or her field.
4. **Professional Projects.** Practicing professionals seeking master's degrees to enhance career progress may complete a professional project under the direction of faculty committees. On completion of a professional project, a student will take an oral examination that assesses the project and the student's broader awareness of theoretical and empirical issues in his or her field.
5. **Required Courses.** All students are required to complete a 12-hour core consisting of JOUR 7025, 7050, 7075, and 7100 plus additional course work approved by the student's adviser to meet specified credit hour totals. Students who choose a concentration in Journalism Administration must complete the following courses in the Fogelman College of Business and Economics: ACCT 7000, MGMT 7030, MKTG 7060, and either FIR 7050 or ECON 7010. No more than three hours in either JOUR 7700 or JOUR 7800, but not both, may be applied to the degree.
6. Each student is responsible for obtaining a copy of the Master of Arts in Journalism Student Handbook from the coordinator of graduate studies or the department office. The document answers most questions about the program.

JOURNALISM (JOUR)

6120. Reporting Public Issues. (3). Analyzing and writing news reports about government, courts, energy, economy, taxes, education, environment, medicine, and science; emphasis on relationship between current issues and public's need to be informed; and on topics vital to large, urban society. **PREREQUISITE:** JOUR 3120 or 3625.

6124. Computer-Assisted Reporting. (3). Advanced use of computer technology and investigative techniques to access, analyze, and develop database information in combination with traditional news reporting. **PREREQUISITE:** JOUR 3120 or 3625.

6214. Magazine Editing & Production. (3). (3120). Editing and production problems of magazines; emphasis on business, industrial, and home periodicals; headline and title writing; pictorial copy layout; staff organization; production processes. **PREREQUISITE:** JOUR 3900 or permission of instructor.

6328. Strategic Advertising Campaigns. (3). Development of creative strategy and its execution to include layouts, audio tapes, slide shows, storyboards, and sales promotion application. **NOTE:** Offered only in spring semester. **PREREQUISITES:** JOUR 3322, 3324, 3345, 4327.

6440. Public Relations Campaigns. (3). Application of theory, research data, and problem-solving techniques in development of comprehensive public relations strategies. **PREREQUISITE:** JOUR 4420.

6500. Mass Media Web Site Management. (3). Creation of journalism/mass media organization World Wide Web sites including conceptualization, layout, and integration of traditional news and information products. Theoretical and ethical issues involving mass media publishing content on the internet including concepts of product placement and audience engagement with news, public relations, and advertising. **PREREQUISITE:** JOUR 3900 or permission of instructor.

6655. Seminar in Electronic Media. (3). Issues and problems confronting electronic media; analysis of various professional, societal, and economic forces that affect broadcast journalism.

6702. Current Issues in Journalism. (3). Advanced study of recent, critical problems faced by the mass media with exploration of complexities that cause them.

6708. Journalism Professional Ethics. (3). Classical approaches to ethics presented with their application to day-to-day considerations a journalist must face in working with employers, local publics, and a larger society that depends on a free and responsible press.

6712. Mass Media and Cultures. (3). International communication, flow of news and propaganda; role in national development and international affairs; growth and impact of global journalism, television news, advertising and public relations; comparison of media systems.

6714. Information Retrieval and Analysis. (3). Using computers to develop and execute search strategies in multiple on-line databases. Critical analysis and archiving of collected information.

6800-09. Special Topics in Journalism. (3). Intensive study of a single critical issue or current topic. Topics may vary. May be repeated for a maximum of six hours.

6900. Desktop Presentation. (3). Using computers to learn processes, software, and production design concepts involved in multimedia, primarily designed for computer-to-computer communication; digital editing of still images, off-line video editing, animation and production techniques for assembling all into single CD or video to convey advertising, public relations, or news-editorial concepts. **PREREQUISITE:** JOUR 3900 or permission of instructor.

7000. Media Writing and Editing. (3). Information gathering, writing, and editing skills necessary for any field within journalism and mass communication through lectures, discussions, and exercises that meld theory to technique; both laboratory writing and field assignments.

†7001-8001. Workshop in Journalism for Graduate Assistants. (1-3). Presentation of research methods and scholarly work by faculty, graduate students, and visiting scholars. Required of all graduate assistants. May be repeated.

7025-8025. Law of Mass Communication. (3). Laws and regulations affecting mass media with attention to social and political forces that shape the law; exploration of First Amendment theories as well as the constitutional framework of the legal system; in-depth legal research in the student's selected area of interest.

7050-8050. Mass Communication Theories. (3). Key concepts and development of theories offered to explain operation and effects of mass communication media; multidiscipline overview of theories dealing with advertising, broadcasting, print, and public relations messages, media, and effects.

7075-8075. Mass Communication Research Methods. (3). Familiarization with content analysis, survey research, data analysis, and field studies as practiced by reporters, editors, and public relations decision makers. Modern research techniques and class project using computer analysis.

7100-8100. Mass Communication Administration Methods. (3). Administration of advertising, news, and public relations enterprises; systems analysis exploration of classic management principles in organization; assessment of environment, planning and strategy, budgeting, staffing, decision-making, and other functions in advertising, news, and public relations.

7200-09-8200-09. Special Topics in Journalism. (1-3). Topics are varied and announced in *Schedule of Classes*.

7300-8300. Mass Communication Literature. (3). Review of scholarly publications, books, periodicals, and databases in advertising, public relations, and news media.

7320-8320. Mass Media and Diversity. (3). Research and analysis of the relationship among mass media, women, and minorities.

7340-8340. Advanced Advertising Practices. (3). Planning and design of advertising campaigns and tactics with primary emphasis on implementation.

7350-8350. Advanced News Practices. (3). Recent research findings in news reporting, writing and editing principles; practical experience in

preparing finished news reports suitable for publication or dissemination in professional-level mass medium.

7375-8375. Integrated Communication. (3). Integration of advertising, direct mail, public relations, and other strategic communication tools to produce a singular message that reaches every target audience segment; emphasis on application of theories to a particular case study.

7400-8400. Public Relations Principles and Issues. (3). Contemporary social trends, public relations roles and responsibilities, and applicable public relations theory.

7420-8420. Public Relations Programming and Production. (3). Design and implementation of public relations programs in response to contemporary issues.

7440-8440. Organizational Public Relations. (3). How organizations maintain rapport with their publics and the mass media by effectively communicating long-range goals.

7450-8450. Public Relations Management. (3). Development and management of public relations practice, department, or consultancy through study of planning and decision-making techniques; aspects of public relations practice that differ significantly from other enterprises; development of proposals and presentations; and management of financial and human resources.

7700-8700. Directed Individual Research. (3). Projects on non-thesis related topics of special interest to the student ending in a completed research article or report. **PREREQUISITE:** Permission of instructor.

7800-8800. Directed Individual Readings. (3). Preparation of literature review for master's thesis with extensive bodies of writing in topic areas. May be taken to prepare scholarly papers on subjects of individual interest. **PREREQUISITE:** Permission of instructor.

†7998. Professional Project. (1-6). Completion of supervised professional project in student's area of expertise. Repeatable to maximum of six hours; only three hours applicable to major.

†7999. Thesis. (1-6).

†Grades of S, U, or IP will be given.

Music

B. GLENN CHANDLER, Ph.D., *Chair*
Room 123B, Music Building

JOHN W. BAUR, D.M.A.
Coordinator of Graduate Studies
(901) 678-2541

E-mail: jbaur@memphis.edu
www.people.memphis.edu/~music/home.htmlx

MEMBERS

- LILY AFSHAR, *Associate Professor*
D.M. (1989), Florida State University [2002]
JOHN W. BAUR, *Professor*
D.M.A. (1977), University of Cincinnati College Conservatory of Music [2003]
ANGELINE CASE-STOTT, *Associate Professor*
M.M. (1978), Memphis State University [2004]
B. GLENN CHANDLER, *Professor*
Ph.D. (1975), Indiana University [2000]
JOHN CHIEGO, *Associate Professor*
M.M. (1979), Northwestern [2005]
DAVID H. EVANS, JR., *Professor*
Ph.D. (1976), University of California, Los Angeles [2005]
DANIEL T. FLETCHER, *Associate Professor*
M.M. (1964), Indiana University [2000]
PAMELA GASTON, *Assistant Professor*
D.M.A. (1988), University of Missouri, Kansas City [2001]
JOAN GILBERT, *Professor*
M.S. (1967), The Julliard School of Music [2001]
MICHAEL E. JOHNSON, *Assistant Professor*
D.M. (1987), Florida State University [2002]

KENNETH KREITNER, *Associate Professor*

Ph.D. (1990), Duke University [2002]

DOUGLAS C. LEMMON, *Professor*

Ph.D. (1975), University of Illinois [2000]

SIDNEY J. MCKAY, *Professor*

D.M.Ed. (1975), University of Southern Mississippi [2000]

SHIRLEY WILKES McRAE, *Professor*

M.Ed. (1966), Memphis State University [2000]

JANET PAGE, *Assistant Professor*

Ph.D. (1993), Duke University [2004]

JOHN DAVID PETERSON, *Professor*

D.M.A. (1970), University of Michigan [2002]

JAMES W. RICHENS, *Professor*

M.M. (1960), Eastman School of Music at the University of Rochester [2004]

RANDAL RUSHING, *Associate Professor*

M.M.E. (1983), University of North Texas [2004]

KONNIE K. SALIBA, *Associate Professor*

M.M. (1961), Southern Methodist University [2000]

LENNY SCHRANZE, *Assistant Professor*

M.A. (1983), New England Conservatory [2002]

CHARLES A. SCHULZ, *Associate Professor*

D.M.A. (1980), North Texas State University [2002]

FRANK SHAFFER, *Associate Professor*

D.M.A. (1980), Yale [2005]

PETER L. SPURBECK, *Professor*

M.M. (1961), Indiana University [2000]

SAM VIVIANO, *Professor*

M.S. (1966), Juilliard [2000]

SUSAN WATERBURY, *Associate Professor*

M.M. (1987), University of Rochester [2004]

ASSOCIATE MEMBERS

DALE CLARK, *Assistant Professor*

D.M.A. (1997), Boston University [2004]

JACK COOPER, *Assistant Professor*

M.A. (1989), California State University—Los Angeles

TIMOTHY GOODWIN, *Assistant Professor*

M.M. (1984), University of Miami-Florida [2001]

DAVID W. SPENCER, *Assistant Professor*

M.M. (1993), University of North Texas [2000]

I. The Department of Music offers the Master of Music degree with a major in Music and concentrations in Performance, Sacred Music, Music History, Orff Schulwerk, Pedagogy, Music Education, Jazz and Studio Music, and Composition; the Doctor of Musical Arts degree with a major in Music and concentrations in Composition, Performance, Sacred Music, and Music Education; the Doctor of Philosophy degree with a major in Music and a concentration in Musicology. The Education Specialist degree is also available through the College of Education with an area of emphasis in Music Education.

The Department of Music is a member of the National Association of Schools of Music.

A. Prerequisites to graduate standing.

A baccalaureate degree in music or the equivalent is required before entrance to a master's program in music.

Graduate work in theory, history, or applied music may not be taken until any identified deficiencies in these areas are removed. Graduate proficiency examinations in music theory and music history are generally held on the two days preceding graduate registration for the fall, spring, and summer terms.

1. A satisfactory grade shall be made on the aural and written theory proficiency examinations. A comprehensive course in theory, analysis, and ear-training (MUTC 6202) is recommended for graduate students in need of review and preparation for graduate work in theory. A satisfactory grade in this course will satisfy the graduate entrance requirement in theory.

2. A satisfactory grade shall be made on the music history and literature proficiency examination. MUHL 3301 and 3302 (Survey of Music History) are recommended for graduate students in need of review and preparation for graduate work in history. Satisfactory grades in these courses will satisfy the graduate entrance requirement in history.

3. A successful audition (or acceptable compositions in various media for candidates who plan a major concentration in composition) shall be presented when applicable to the anticipated degree program.

4. Students taking courses in vocal pedagogy or vocal performance must satisfactorily pass the proficiency examination in Diction administered by the Voice Division. Unsatisfactory performance in this area will make immediate enrollment in the Diction course mandatory.

5. All entering students for whom English is not a native language are required to demonstrate competency in written and spoken English, and, if necessary, complete satisfactorily instruction through the level of ENGL 1101.

6. Evidence of writing skill is required for the Master of Music with a concentration in music history or music education.

B. Prerequisites to Master's degree candidacy.

1. The program of the student's intended degree shall be planned.

2. The student shall declare a concentration area. Admission to graduate standing in the proposed major must be approved by the area chair.

3. A thesis topic shall be chosen and approved in those degree programs involving the thesis or music education.

4. Evidence of keyboard proficiency is required of students taking courses in choral music education, composition, voice performance, and vocal pedagogy.

C. Prerequisites for graduation.

1. A student with a concentration in performance must successfully complete an audition for the public recital and shall perform that recital with distinction. Outstanding performers may be recommended for the Performer's Certificate by their major professor at the time the recital audition is held. Following a favorable recommendation of the audition committee, the chair of the Department of Music will convene a panel of the applied music faculty to hear the recital and make a recommendation concerning the award.

2. A student of whom a thesis is required shall submit an acceptable thesis.

3. The comprehensive examination shall be taken and passed.

Complete details of this outline may be obtained by writing the Coordinator of Graduate Studies in Music, Department of Music.

4. Reading knowledge of one language, preferably German, for the Master of Music with a concentration in music history.

II. M.Mu. Degree Program

A. Core Requirements (10 Hours)

Graduate Ensemble (1)

Coursework from the following areas (9)

Music History

Music Theory

Bibliography and Research Methods

N.B. Any theory or history course may be used for the Core Requirements with the exception of individual studies, pedagogy, or repertory courses.

B. Program Requirements (See Note 3) (22-28 Hours)

1. Performance (See Note 4)

Applied Music (individual lessons) (14; 12 for voice)

Recital (3)

Large Graduate Ensemble MUAP 7001 (1)

Music Electives (6)

2. Sacred Music

Applied Music (individual lessons in organ or voice) (8)

Sacred Music Core (9)

Recital (3)

Large Graduate Ensemble MUAP 7001 (1)

Electives (3)

3. Musicology

Music History (12)

Minor Concentration in Music (6)

Thesis MUHL 7999 (6)

Large Graduate Ensemble MUAP 7001 (1)

4. Pedagogy

Applied Music (individual lessons) (6-8)

Pedagogical Area (14-17)

Graduate Ensemble (1)

5. Orff-Schulwerk

Orff-Schulwerk Core (12)

Graduate Ensemble (See Note 6) (1)

Electives (9)

6. Music Education (See Note 5)

Music Education Core (8)

Applied Music (1)

History & Philosophy of Music Education MUSE 7402-8402 (3)

Assessment in Music Education MUSE 7401-8401 (3)

Large Graduate Ensemble MUAP 7001 (1)

Music Education Tracks (12)

Research

Survey of Research in Music Education MUSE 7403-8403 (3)

Tests & Measurements in Music Education MUSE 7207-8207 (3)

Thesis MUSE 999 (3)

Electives (3 hrs from the following, or chosen in consultation with the advisor) (3)

MUSE 7208-8208; 6801; 7202; 8202; 6205 (+1 hr.); 7203-8203; 7204-8204; 6208; 7501-8501; 7507-8507; 6511, 7508-8508; 7509-8509; MUHL 6800.

Professional

Teaching Music Comprehensively MUSE 6801 (3)

Advanced Conducting MUAP 7001 (3)

Electives (6 hrs. from the following, or chosen in consultation with the advisor)

Applied Music

Individual Lessons, or

Large Graduate Ensemble MUAP 7001, or MUSE 7208-8208; 6802; 7301; 7203-8203; 7204-8204; 6208; 6205; 7501-8501; 6511; 7507-8507; 7508-8508; 7509-8509; MUHL 6800; CMUS 6103; 7101.

7. Jazz and Studio Music (See Note 7)

CMUS 7801 (3-6)

CMUS 7010, 7201, 7260, 6102, 6502, 7101;

MUTC 7502, MUSE 6512 (6)

Performance/Composition-Arranging (6-8)

Recital/Practicum/Thesis (3)

Jazz and Studio Music Electives (5-10)

8. Composition

Composition (14)

Composition Practicum (3)

Large Graduate Ensemble (1)

Music Electives (6)

C. NOTES:

1. A satisfactory grade on the music history proficiency examination must be made before enrollment in a course in Style Periods in Music History. For graduate students in need of review, MUHL 3301 and 3302 are offered. These courses do not apply to the fulfillment of degree requirements.
2. A satisfactory grade on the aural and written theory proficiency examinations must be made before enrollment in one of the suggested graduate theory courses. For graduate students in need of review, MUTC 6202 is offered. While this course does not apply to the fulfillment of degree requirements, a satisfactory grade in this course will meet the graduate entrance requirement in music theory.
3. Specific program requirements are determined as a cooperative effort between the student and the Adviser of Record.
4. For students studying voice, a minimum of 6 undergraduate hours in each of the following languages is required: French, German, and Italian. In addition, a student must have 2 semesters of Song Repertory. Both the language and repertory requirements may be fulfilled while a student is in Graduate School.
5. This program is designed for individuals holding a license in music. If a candidate is not licensed to teach music, all requirements for licensure must be met prior to admission to graduate study.
6. Students in Pedagogy studying piano may substitute an elective for one hour of graduate ensemble.
7. Students planning a concentration in Jazz and Studio Music must achieve a satisfactory grade on the proficiency examination administered by that division. Students showing deficiencies may be placed in appropriate undergraduate courses. Students planning to take applied instruction at the 7000 level must perform an audition of classical and jazz literature in several styles. Students planning to take jazz composition/arranging must submit tapes and scores of several works for various media.
8. Students with assistantships are required to take 12 hours each semester, three of which may be MUSE 7001-8001.

III. D.M.A. Degree Program

The program is structured to allow maximum flexibility in designing a program around each student's background and needs. While the distribution of hours is firm, program requirements are to be regarded as general rather than fixed. The student's preparation, experience, and stated goals are carefully evaluated before an individually selected course of study is prescribed.

Admission to the Graduate School allows a student to take courses at the graduate level. It does not in any way imply that a student is admitted to candidacy for an advanced degree.

A. Admission to the Post-Master's Program

The following items are requirements for admission:

1. University Requirements. All requirements for admission to the university, including official transcripts and an acceptable score on the Graduate Record Examination, must be met for a student to be admitted to graduate study in music. A student may substitute the Revised Music Subject Examination of the Graduate Record Examination for the quantitative portion. The minimum acceptable score is 500. The university regulations for minimum total score still apply. Complete information may be found in the section on Admission to the Graduate School in this catalog.
2. Master's Degree. Students requesting admission to a doctoral program in music must (1) present a master's degree in the area of specialization which they intend to pursue or (2) provide the faculty with satisfactory evidence of potential for successful work in the intended area, through performance either in assigned courses or in examinations.

Students should have completed one of the following degrees or its equivalent:

- a. Master of Music
- b. Master of Music Education
- c. Master of Arts in Music History
- d. Master of Arts in Applied Music
- e. Master of Arts in Ethnomusicology (Southern Regional Studies)

3. Qualifying Examinations. All students applying to a post-Master's degree in music must take the qualifying examinations in music history and music theory. An entering student should have a good grasp of music theory relating to music from the eleventh century to the present, a thorough knowledge of historical styles, and an awareness of the relationship between music and its sociological and historical matrices. The qualifying examinations are diagnostic and may be taken once only. On the basis of the test results, course work may be assigned which must be completed within the first year of graduate study.
4. All students in performance must perform an audition. Voice performance students must pass the vocal diction proficiency examination or take the undergraduate diction course. Students in composition must present a portfolio of compositions in different media. Students in Music Education must submit an essay. Students in Sacred Music must submit an essay, a portfolio of compositions, or perform an audition as is appropriate to their specialties. When all of these requirements have been met, a committee should be formed and a course of study devised.
5. Evidence of writing skill is required for the Ph.D. with a concentration in musicology.

B. Candidacy

1. Prerequisites: a) successful completion of 40 hours of coursework; b) bibliography requirement: master's level course or Bibliography and Research Methods (MUHL 7400); c) written comprehensives in music history and theory, and oral comprehensive; d) completion of the residency requirement of consecutive fall and spring semesters. The student should then file the candidacy forms and seek approval of the dissertation topic or the proposal for the recitals. In addition, the D.M.A. degree requires one research proficiency area to be chosen from the following:
 - a. Foreign language (demonstrated equivalence of two semesters at the undergraduate level in the same language; the language must be approved by the student's doctoral committee;
 - b. Statistics (EDPR 7541-8541); or
 - c. Computer science (one semester of 7000-8000 level).

Dissertation/Dissertation equivalent:

Music Education: A dissertation is required.

Performance: Three public recitals are required to satisfy the performance concentration. The last of the recitals must be a lecture recital on a topic selected by the candidate and approved by the committee. The material covered in the lecture-recital will also be submitted as a formal research document. (Piano majors will be required to perform a chamber music recital and a standard concerto in addition to the three solo recitals. These requirements are part of the applied music hours.)

Composition: A work of major proportions is required.

Sacred Music: The final project in Sacred Music may take different forms and should reflect the minor as well as the sacred music major. It may be a dissertation, recitals, lecture-recitals, compositions, or a combination.

Submission of the Dissertation: All regulations of the Graduate School regarding the mechanics and submission of dissertations apply with equal force to those in music. The research document for those in performance should be an exhaustive study of the material chosen. All degree recitals must be taped and a copy of the tape placed on file in the Music Library.

Final Examination. For students writing a dissertation, the final examination will consist of a defense of the dissertation before the dissertation committee. Other faculty may attend or be invited to participate.

For those in performance, the examination will be a defense of the literature performed, the research on the lecture recital material, or other areas related to performance. At the conclusion of the examination, the results, in writing, will be conveyed to the Coordinator of Graduate Studies by the major professor.

Graduation. The timetable and requirements for graduation are set by the Graduate School and published in the graduate catalog.

C. Post-Master's Assistantships.

Study at the postmaster's level involves considerable sacrifice of time and often earning power to fulfill the requirement of most institutions that a full year must be spent in residence before a degree can be awarded. By awarding assistantships at the post-master's level, the Department of Music seeks to accomplish two purposes: first it is our intention to attract the very best combination of talent and scholarship available; and second it is our wish to encourage as many talented, mature students as possible to continue learning by providing basic subsistence during the year of residence. Normally, therefore, stipends to postmaster's students will be for one year only. In exceptional cases, staffing or research needs may make an extension for a second year desirable.

D. Concentration Area Requirements

1. Performance (bass, bassoon, cello, clarinet, flute, guitar, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, viola da gamba, violin, voice) (63 hours)

In addition to the area of specialization, a minor area in music is required. Elective hours may be taken either in music or in other areas. Three public recitals are required to satisfy the performance concentration. The last of these must be a lecture recital on a topic selected by the candidate and approved by his committee. (Piano majors will be required to perform a chamber music recital (2) and a standard concerto in addition to the two solo recitals and the lecture-recital. (2) These hours will count as part of the applied music requirement.) The material covered in this recital will be submitted also as a formal research document. Each of the recitals must be taped and a copy of the tape placed on file in the library.

Distribution of hours will normally be as follows:

	HOURS
Applied Music	24
Minor Area in music	18
Electives, to be chosen with the approval of the student's committee	12
Recital	9
2. Composition (60 hours)	
Composition (to include 3 hours of Composition Practicum)	21
Minor Area in music	18
Electives, to be chosen with the approval of the student's committee	12
Dissertation*	9

*This will consist of a work of major proportions.

3. Sacred Music (60 hours)
- MUSA 8801 Studies in Sacred music (topics to vary) (9)
- Other courses in any of the following areas: (18)

Voice
Voice Pedagogy
Conducting
Choral Techniques
Organ
Sacred Music
Orff-Schulwerk

- Music Minor (12)
Twelve hours in one area of music which is not part of the sacred music core, to be chosen in consultation with student's committee.
- Electives (12)
To be chosen in consultation with the student's committee.
- Final Project (9)
The final project may take different forms and will reflect the minors as well as the sacred music major. It could be a dissertation, recitals, lecture-recitals, compositions, or a combination.

4. Music Education (60-62 hours)
- NOTE: This program is designed for individuals holding a license in music education. If a student is not licensed to teach music, all requirements for the licensure must be met prior to admission.
- | | |
|---|------------------------------|
| Music Education | 12 hours including MUSE 8402 |
| Music History | 6 hours |
| Music Theory | 6 hours |
| Professional Education | 6 hours |
| EDPR 7523-8523 Statistical Methods | 3 hours |
| Elective | 3 hours |
| Applied Music (individual study) | 4 hours |
| Ensemble | 2 hours |
| General Electives | 14-16 hours |
| (to be chosen in consultation with the student's committee) | |
| Dissertation | 10 hours |

V. Ph.D. Program-Musicology (60 hours)

Students will follow either:

- (a) a program providing a broad background in historical musicology culminating in a dissertation on a musicological topic agreed upon by the student and the doctoral committee.

A minimum of eleven courses (33 hours) in the major area, including:

MUHL 8400 Bibliography and Research Methods
MUHL 8531 Early Musical Notations
MUHL 8505 Seminar in Musicology
Six courses (18 hours) in an approved academic minor other than music.
MUHL 8999 Dissertation
OR

- (b) a program providing a broad background in ethnomusicology:

A minimum of eleven courses in the major area 33 hours
MUHL 6800 World Musical Styles 3
MUHL 6801 American Folk and Popular Music 3
MUHL 7400/8400 Bibliography and Research Methods 3
MUHL 7800/8800 Field Methods in Ethnomusicology 3
MUHL 8801 Ethnomusicology 3

MUHL 8805 Transcription and Analysis in Ethnomusicology	3
MUHL 8806 Seminar in Southern Regional Music	3
Three of the remaining five courses in music shall have a major focus on Southern regional music.	18
Six courses in an approved academic minor area or areas other than music	18
Dissertation (MUHL 8999)	9

General Requirements

1. Specialized courses in music and appropriate related disciplines that support the student's research interest will be included.
2. In special cases with the approval of a student's committee, no more than 9 hours in areas of music, outside Musicology, may be counted toward the fulfillment of the required 18 hours in a minor area or areas.
3. A reading knowledge of two foreign languages (ordinarily including German) must be demonstrated prior to degree candidacy.
4. All students applying to a doctoral degree in music must take the qualifying examinations in music history and music theory. An entering student should have a good grasp of music theory relating to music from the eleventh century to the present, a thorough knowledge of historical styles, and an awareness of the relationship between music and its sociological and historical matrices. The qualifying examinations are diagnostic and may be taken only once. On the basis of the test results, course work may be assigned which should be completed within the first year of graduate study.
5. Students entering the Ph.D. program without a prior master's degree must complete 30 additional hours of work including 18 hours of MUHL electives; 9 hours in an academic minor outside music; and 3 hours of MUHL 7999 (Thesis).
6. At the end of coursework, students must take a comprehensive examination in musicology, administered by the doctoral committee and tailored by the committee to the individual student's research interests; see advisor for details.
7. Students with assistantships are required to take 12 hours each semester, 3 of which may be MUSE 8001. MUSE 8001 may not be counted toward fulfillment of degree requirements.

COMMERCIAL MUSIC (CMUS)

6102. Composer's Workshop: Jazz/Commercial. (3). Composition/arranging for various sizes of instrumental and vocal groups with emphasis on commercial writing; projects in record copies, horn and string tracks, background vocals, instrumental accompaniment for vocal solos, jingles, and radio station ID's. (Offered spring semester of odd years.) **PREREQUISITES:** CMUS 2101, 2502, or permission of instructor.

6103. Jazz and Studio Ensemble Techniques. (3). Jazz and studio performance styles and practices, emphasizing ensemble rehearsal and conducting techniques, articulation, phrasing, balance and blend, line dominance, and recording studio performance skills. (Offered fall semester.) **PREREQUISITE:** CMUS 3828.

6260-69. Special Topics in Commercial Music. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated with change of topics.

6502. Introduction to Film and Studio Scoring. (3). Basic problems of writing music for film and video, including commercial and industrial productions, features, selection of appropriate styles, creating master music list, writing from cue sheet; introduction to editing room equipment, including conversion of film frames to video, SMPTE time code and synchronization equipment, MIDI sequence scoring from digital audio workstation. (Offered alternate years.) **PREREQUISITES:** MUTC 2511, CMUS 3501, and either CMUS 3801 or MUTC 4511 or 4505, or permission of instructor.

6602. Music Industry Business Practice and Structure. (3). Examination of organization, structure, and business relationships upon which commercial music industry operates. Topics include: industry structure, fundamental music business processes and activities, music as property, uses of music media, career options.

6603. Copyright and Licensing. (3). Detailed examination of intellectual property rights as they relate to commercial music industry. **PREREQUISITE:** CMUS 6602.

7010. Advanced Improvisatory Practices and Materials. (3). Advanced improvisational techniques, including motivic development, pan-diatonic, panchromatic, and free improvisation; practices involving pentatonic, quartal, cluster, and polychordal compositions, survey and analysis of published improvisation teaching materials. **PREREQUISITE:** Two semesters (or equivalent) of undergraduate improvisation, permission of instructor.

7101. Jazz Program Administration. (3). Basic administration of a college level jazz program; course and curriculum development/design, scheduling/planning, material acquisition, basic equipment needs, budgeting and budget administration, concert and festival planning/programming/production. **PREREQUISITE:** Permission of instructor.

7201. Analytical Studies in Jazz Styles. (3). Directed study in selected areas of jazz historical styles; transcription and analysis of selected recordings and scores from specific jazz and popular styles; critical aural study of stylistic interpretation of major jazz big bands and combos of selected style periods. **PREREQUISITE:** Permission of instructor.

7260-69. Special Topics in Jazz Studies. (1-3). May be repeated with change of topic.

7699. Media Music Production Practicum. (3).

7801. Studies in Jazz and Commercial Music. (3). Directed individual or class study in selected areas chosen in consultation with instructor. May be repeated with change in topic for a maximum of 9 hours credit.

†7999. Thesis: Jazz and Studio Music. (1-3).

MUSIC THEORY AND COMPOSITION (MUTC)

6202. Seminar in Music Theory and Analysis. (3). Theory, counterpoint, and analysis of literature. Contrapuntal and harmonic techniques. Research; theoretical problems from a pedagogical point of view; writing in strict and free styles. Recommended as a review course for graduate students. May not be counted toward any degree program in music except the M.A. and Ph.D. in Musicology with permission of the major advisor. (Offered fall semester.)

6260-69. Special Topics in Theory and Composition. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated with a change in topic.

6501. Composition. (2 or 4). Composition in varied forms for large and small ensembles and solo instruments; analysis of contemporary works and practical application of techniques. May be repeated for additional credit. Composition is taught as applied music. Students receive the equivalent of one hour lesson per week. The fee for this instruction is \$40.00 per semester.

7101-8101. Pedagogy of Theory. (3). A practical course in classroom procedure. Demonstrations by students and instructor in teaching the rudiments, elementary and advanced theory, various styles of counterpoint, and ear training. Various theoretical systems. Bibliography.

7102-8102. Analytical Techniques. (3). Techniques of analysis of styles and structure of music from all periods of the history of music.

7201-8201. Theory I. (3). Analysis of style features of the music of the 11th century through the Baroque period.

7202-8202. Theory II. (3). Analysis of style features of the music of the Classic, Romantic, Impressionist, and Contemporary periods.

7203-8203. Studies in Music Theory. (3). Independent investigation of a research procedure or directed reading in selected areas of music theory chosen with consultation of instructor. May be repeated for credit when topic varies. **PREREQUISITE:** Permission of instructor.

7204-8204. History of Music Theory. (3). Development of theoretical concepts of music found in treatises and textbooks, dating from 550 B.C. to 1937 A.D.

7260-89-8260-89. Special Topics in Theory and Composition. (1-3). Selected topics in theory or composition. May be repeated with change of topics.

7501-8501. Composition. (2, 3 or 6). Free composition in all forms. Applicants to this course are required to submit original works in various forms and media as proof of maturity and technical preparation for graduate work. The course may be repeated with the instructor's permission for successive semesters. Composition is taught as applied music. Students receive the equivalent of two half-hour lessons per week. The fee for this instruction is \$90.

7502-8502. Electronic Compositional Techniques. (3). Emphasis on tape manipulation, synthesizer operation, and recording techniques in association with individual compositional projects. May be repeated for credit with permission of instructor. The fee for this instruction is \$90.

7503-8503. Composition for Non-Composition Majors. (2 or 4). Composition in varied forms for large and small ensembles and solo instruments; analysis of contemporary works and practical applica-

tion of techniques. May be repeated with instructor's permission. The fee for this instruction is \$90.

†7599-8599. Composition Practicum. (3-6).

†7999. Thesis. (1-3).

†8999. Dissertation. (1-9).

†Grades of S, U, or IP will be given.

MUSIC HISTORY AND LITERATURE (MUHL)

6001. Piano Repertory. (3). Survey of stringed keyboard repertory from Bach and his contemporaries to the present. Representative works analyzed in regard to historical, stylistic, formal, and aesthetic features. (Offered fall semester.)

6002. Song Repertory I. (3). Survey of solo literature from Italian, British Isles, and German schools of song. (Offered alternate years.)

6003. Song Repertory II. (3). Survey of solo literature from French, Russian and Slavic, Scandinavian, and American schools of song. (Offered alternate years.)

6005. History and Literature of the Organ. (3). Literature for the organ and its effect on and interaction with organ design.

6006. Guitar Literature I. (3). Basic repertoire from the Medieval period through the Pre-Classical period.

6007. Guitar Literature II. (3). Basic repertoire from the Classical period to the present.

6260-69. Special Topics in Music History. (1-3). Selected topics in Music History. May be repeated with change in topic.

6407. The Opera and the Music Drama. (3). A survey of the opera before Richard Wagner; study of Wagner's music dramas and opera of his contemporaries; dramatic and musical significance of each phase of the development of the two forms. **PREREQUISITE:** Permission of the instructor.

6500. String Repertory. (3). Histories, tests, methods, periodicals, orchestral studies, and solo and ensemble literature.

6800. World Musical Styles. (3). Musical styles and the role of music performance in preliterate and folk societies throughout the world. (Offered spring semester.)

6801. American Folk and Popular Music. (3). Folk and popular elements in American music. The role of mass media, especially the phonograph record, in utilizing and changing folk music. The historical development and interrelationships between various musical styles ranging from nineteenth century minstrelsy to the roots of rock and roll. Emphasis on southern Anglo-American and Afro-American folk and popular musical styles. (Offered fall semester.)

6804. Blues. (3). Stylistic development of blues music from its beginnings; relationships to African-American and American culture and history. (Offered fall semester.)

6805. History of Rock and Roll. (3). Stylistic origins and development of rock and roll music from its beginning to the present.

6806. History of Jazz. (3). Stylistic origins and development of jazz interaction of jazz and Western classical music styles.

6807. Memphis Music. (3). Distinctive forms of folk and popular music in Memphis in the twentieth century; relationships to the history, culture, and social patterns of the city and mid-south region folk music background, blues, jazz, country music, gospel music, and rock and roll emphasized. (Offered spring semester.)

7260-69-8260-69. Special Topics in Music History. (1-3). Selected topics in Music History. May be repeated with change of topic.

7400-8400. Bibliography and Research Methods. (3). Survey of the fields of historical and systematic investigation in music with bibliographical studies and research analysis. Required of all students who intend to write a thesis.

7401-7406 - 8401-8406. Style Periods in Music History. (3). Music and historical data from various periods of Western musical history.

7401-8401. Medieval Music.

7402-8402. Renaissance Music.

7403-8403. Baroque Music.

7404-8404. Classic Music.

7405-8405. 20th Century Music.

7408-8408. Individual Research in Musicology. (1-3). Individual research on a selected topic under faculty supervision. May be repeated when the topic varies.

7406-8406. Nineteenth-Century Music.

7505-8505. Seminar in Musicology. (3). Seminars in selected areas of musicology. May be repeated when topic varies.

7506-8506. Seminar in Piano Repertory. (3). Seminars in selected areas of piano repertory; may be repeated when topics vary. PREREQUISITES: MUHL 6001 or permission of instructor.

7531-8531. Early Musical Notations. (3). Examination of history of Western musical notations from the ninth through seventeenth centuries; transcription of medieval music from its original sources into modern notation; singing and playing renaissance and early baroque music from facsimiles of original manuscripts and prints.

7800-8800. Field Methods in Ethnomusicology. (3). An exploration of techniques for designing field research subjects and gathering information in the field. Special attention will be given to techniques and problems related to the study of southern musical traditions.

7802-8802. Seminar in Ethnomusicology. (3). Seminars in selected topics. May be repeated for credit when the topic varies.

7803-8803. Individual Research in Ethnomusicology. (1-3). Individual research on a selected topic under faculty supervision. May be repeated if the topic varies. Only 3 hours credit may be applied toward a master's degree and only 6 hours credit toward a doctoral degree.

7804-8804. Internship in Southern Regional Music. (3). Practical experience in the application of knowledge and skills learned through the study of Southern regional music. The student will do supervised work in an area of music production, presentation, administration, or education for a public agency or in the private sector. This course may be repeated with a different type of internship, but only 3 credit hours may be applied toward any degree. PREREQUISITE: 18 credit hours in Ethnomusicology or Southern Regional Music.

†7999. Thesis. (1-3).

8801. Ethnomusicology. (3). A survey of concepts, problems, and methods of research in the interpretation of music in different social groups. Emphasis will be placed on functional and popular music rather than art music, and on cultures other than Western European and North American.

8805. Transcription and Analysis in Ethnomusicology. (3). An examination of the problems and methods of transcribing and analyzing non-Western and traditional music; the uses and limitations of staff notation; alternative descriptive systems.

8806. Seminar in Southern Regional Music. (3). Major issues in the study of southern folk and popular music. Among the topics will be the relationship between Afro-American and Anglo-American styles and traditions, the relationships of these styles and traditions to African and European music, and the interplay of traditionalism and commercialism in southern music. PREREQUISITES: Completion of 18 graduate level credit hours in music, including MUHL 7400 and MUHL 6801.

999. Dissertation. (1-9).

Grades of S, U, or IP will be given.

SACRED MUSIC (MUSA)

104. Sacred Music in History and Practice I. (3). Jewish and Christian sacred music, exploring origins of styles, traditions, and current practices. This course may NOT be used as part of Sacred Music core. Offered fall semester of alternate year.)

105. Sacred Music in History and Practice II. (3). (Offered spring semester of alternate year.)

106. Children's Choirs in the Church. (3). Organization and development of children's choir program; rehearsal techniques; literature; vocal development; recruiting; contemporary approaches. (Offered fall semester.)

107. Service Playing for Organists. (3). Playing of hymns and accompaniments, adaptation of piano and orchestra accompaniments, basic improvisation. PREREQUISITE: Upper division standing in organ or permission of instructor. (Offered spring semester of alternate year.)

6260-69. Special Topics in Sacred Music. (1-3). Selected topics in Sacred Music. May be repeated with change of topic.

6801. Individual Studies in Sacred Music. (1-3). Directed individual study in selected areas of music chosen in consultation with instructor. May be repeated for credit with permission of department chair. Maximum of 9 hours credit allowed.

7001-8001. Oratorio and Cantata. (3). Study of large non-liturgical sacred music forms from the seventeenth century to the present.

7102-8102. Musical Passions. (3). History of musical Passions from Gregorian usage through the present.

7103-8103. Sacred Choral Music of J. S. Bach. (3). The cantatas, motets, and other sacred choral works of J. S. Bach and their stylistic development from early sectional forms to Bach's mature style; revised chronology of cantatas and their relationship to instrumental works will be emphasized.

7801-8801. Studies in Sacred Music. (1-3). Directed individual or class study in selected areas of music chosen in consultation with instructor. May be repeated for credit with permission of department chair. May be repeated for a maximum of 9 hours credit.

MUSIC EDUCATION (MUSE)

6001. Orff-Schulwerk for Classroom Teachers. (3). Broad, practical introduction to use of Orff-Schulwerk approach to elementary music teaching. Development of performance leadership skills stressed. Not open to music majors.

6201. Individual Studies in the Teaching of Music. (1-3). Individual study of problems and opportunities faced by those who teach music in the schools; for classroom teachers, music teachers, supervisors, principals, and administrators. May be repeated for up to 6 hours credit.

6205. Marching Band Techniques. (2). Organizing and conducting the marching band; gridiron charting and marching procedures with a study of precision drill, formation, and pageantry. (Offered spring semester.)

6208. Band Literature. (3). History and evolution of wind instruments and wind instrument playing; history and development of the wind band and its literature, with general background material on the specific composers involved. (Offered spring semester.)

6209. Piano Tuning and Repair. (2). Basic techniques involved in piano tuning and adjustment. Some basic tools are required.

6260-69. Special Topics in Music Education. (1-3). Selected topics in Music Education. May be repeated when topic changes. Training teachers for beginning through intermediate level piano instruction; establishing strong artistic, musical, and technical foundations; supervised practice teaching. PREREQUISITE: Permission of instructor. (Offered fall semester.)

6501. Piano Pedagogy I. (3). Training teachers for beginning through intermediate level piano instruction. Establishing strong artistic, musical, and technical foundation. PREREQUISITE: permission of instructor. (Offered fall semester.)

6503. Piano Pedagogy II. (3). Training teachers for advanced piano instruction; extensive readings from renowned artist-teachers and performers, development of ideation and memorization skills; observations and supervised practice teaching. PREREQUISITE: MUSE 6501 or permission of instructor. (Offered spring semester.)

6505. Principles of Accompanying. (3). Performance class involving practical study of instrumental and vocal standard repertory and problems of ensemble playing; encourages facility in sight-reading and the ability to assimilate music rapidly; score reading, transposition, and figured-bass realization are introduced as skills necessary to well-rounded musicianship. PREREQUISITE: Permission of instructor. (Offered spring semester.)

6508. Principles of Suzuki Piano. (3). Suzuki philosophy as applied to the development of the child's abilities and the role of the teacher and the parent. Analysis of the technical and musical instruction of the beginning piano student. PREREQUISITE: Undergraduate upper-division piano proficiency. (Offered fall semester.)

6511. Class Piano Pedagogy. (3). Survey of group instruction techniques in the teaching of beginning, intermediate, and early advanced piano. Emphasis on observation and practical application. For piano

majors and/or prospective piano teacher. **PREREQUISITE:** Upper division level in keyboard or permission of instructor, Basic Piano Pedagogy or equivalent recommended. (Offered fall semester.)

6512. Jazz Pedagogy for Music Educators. (3). Design and implementation of comprehensive jazz curriculum for secondary or college level; teaching methodology in all disciplines of jazz idiom. **PREREQUISITE:** advanced standing, permission of instructor.

6801. Teaching Music Comprehensively. (3). A methods course designed to bring music theory, history, literature, performance, composition, and analysis to bear on the teaching of music at any level—elementary, junior high, high school, college, and private studio.

6802. Level I Orff-Schulwerk. (1-3). Basic Orff-Schulwerk techniques including body movement, soprano recorder, percussion, vocal performance, improvisation, and arranging. **PREREQUISITE:** Graduate standing in Music.

†7001-8001. Workshop in Music for Graduate Assistants. (1-3). Overview and practical demonstrations of the art of teaching music. Required of all graduate assistants. May be repeated.

7103. Level II Orff-Schulwerk. (1-3). (6803). Intermediate level Orff-Schulwerk techniques including modal harmonization, irregular rhythms, alto recorder, performance, and more extensive improvisation and arranging. **PREREQUISITE:** MUSE 6802 or the equivalent.

7104. Level III Orff-Schulwerk. (1-3). (6804). Advanced Orff-Schulwerk techniques including original compositions, complex form, movement and instrumental arrangements, tenor and bass recorder performance, and advanced improvisation. **PREREQUISITE:** MUSE 7103 or the equivalent.

7202-8202. Music in Early Childhood. (3). Research and analysis of contemporary trends in field of early childhood education with emphasis on developing appropriate music activities for three to six year olds.

7203-8203. Choral Literature and Techniques. (3). Survey of choral literature from Dunstable to the present, using scores, records, and class performance. Analysis of the scores in terms of style, form, and performance problems. Techniques of teaching and conducting unfamiliar styles.

7204-8204. Instrumental Literature and Techniques. (3). Specific and intensive research in each student's major instrument, covering (1) history of the instrument, (2) tests, methods and periodicals, (3) orchestral studies, (4) solo and ensemble literature, and (5) listening and performance.

7207-8207. Tests and Measurements in Music Education. (3). The investigation of evaluative tools in music education, formulation and utilization of measurement devices in music teaching and research.

7208-8208. Administration and Supervision of Music. (3). An integrating course which involves the administrative considerations basic to all facets of music education programs, K-12. Objectives, organization, staffing, financing, facilities, public relations. Federal programs. Includes laboratory field experience.

7210-8210. Projects in Elementary Music Curriculum Development, Implementation and Supervision. (3). Individualized in-depth study of a selected area in elementary school music education. Topics may include curriculum, program planning and development, evaluation of current practices, exploration of new or related fields. **PREREQUISITE:** Permission of instructor.

7211-8211. Projects in Secondary Music Curriculum Development, Implementation and Supervision. (3). Individualized in-depth study of a selected area in secondary school music education, vocal or instrumental. Topics may include curriculum, program planning and development, evaluation of current practices, exploration of new or related fields. **PREREQUISITE:** Permission of instructor.

7213-8213. Orchestration for Orff Instrumentarium. (3). An analysis of techniques used to orchestrate for Orff instruments as done in Europe, Asia, North and South America; original orchestrations in the elemental Orff style. **PREREQUISITE:** MUSE 4803-6803 or permission of the instructor.

7214. Master Class in Orff-Schulwerk. (2). Advanced pedagogy based on Orff-Schulwerk principles, designed to train workshop clinicians. Training includes orchestration techniques, ontogenetic treatment of rhythm and melody, movement improvisation and recorder playing. **PREREQUISITE:** MUSE 4804-6804 or equivalent experience.

†7215. Internship in Orff-Schulwerk. (3). A laboratory experience for the student, with assignment to a local elementary school to work with

an Orff-trained music specialist. The student will be asked to design a specific project capable of being completed in a semester's time. The project will be supervised and evaluated by a faculty member in the elementary music education department.

7216. Project in Class Piano Pedagogy. (3). Students, assigned to piano classes at the University and/or local secondary schools, will assist the principal teacher. May be repeated for credit when area of study varies. **PREREQUISITES:** MUSE 6511 or permission of instructor.

7260-79-8260-79. Special Topics in Music Education. (1-3). Selected topics in Music Education. May be repeated when topic changes.

7301. Choral Arranging. (3). Problems of arranging music for various choral groups: K-6, junior high, and senior high; 3- and 4- part women's and men's choruses; mixed choruses.

7401-8401. Assessment in Music Education (3). For students in music education and practicing music teachers; broad foundation in musical assessment as applied in the music classroom, from learning theory to practical application of assessment techniques, critical thinking, developmental profiling, and developmental progress reporting.

7402-8402. History and Philosophy of Music Education. (3). An examination of the historical and philosophical foundations that underline the curricula and instructional programs in music.

7403-8403. A Survey of Research in Music Education. (3). Designed to acquaint students with theoretical and practical field research; to refine writing skills; to hypothesize and to develop potential research problems.

7501-8501. Vocal Pedagogy I. (3). Processes in voice production; respiration, phonation, articulation, resonance. Psychological, physiological, and acoustical problems. Voice classification, quality, diction, breath support, breath control.

7502-8502. Vocal Pedagogy II. (3). A study of different approaches to the teaching of voice including the observation of faculty members instructing students. Assignment of students to each member of the class for supervised teaching. **PREREQUISITE:** MUSE 7501.

7503. Introduction to Suzuki Piano. (3). Suzuki philosophy as applied to the development of a child's abilities; particular emphasis on listening, parent-teacher relationship, tone production, posture, technique, and Suzuki Piano Volume I-A; includes observation of lessons and classes taught by experienced teachers in the University Suzuki Piano Program. **PREREQUISITE:** audition or permission of instructor

7504-8504. Suzuki Piano Literature and Technique I. (3). Analysis of pedagogical materials and fundamental techniques introduced in Volumes I-III of Suzuki Piano School; emphasis on listening, tone production, independence, independence of hands, musical form and styles, musical expression; introduction of music reading, scale and chord progressions; observation of lessons and classes taught by experienced teachers in the University Suzuki Piano Program. **PREREQUISITE:** MUSE 7503 or permission of instructor.

7505-8505. Suzuki Piano Literature and Technique II. (3). Analysis of pedagogical materials and fundamental techniques introduced in Volumes IV-V of Suzuki Piano School; continuation of techniques to cover the advanced technique and understanding of musical style required for the literature in these volumes; observation of lessons and classes taught by experienced teachers in the University Suzuki Piano Program. **PREREQUISITE:** MUSE 7504 or permission of instructor.

7506-8506. Independent Study in Suzuki Teaching. (3). Independent study of a selected topic in relation to Suzuki philosophy and method. **PREREQUISITE:** MUSE 7510 or permission of the instructor.

7507-8507. Brass Pedagogy. (3). Teaching of brass instruments to junior and senior high school students; materials and methods covering problems unique to brass.

7508-8508. Percussion Pedagogy. (3). Pedagogical and technical aspects of percussion instruments. Emphasis on analysis of performance problems to provide pedagogical insight, not technical proficiency, on all percussion instruments.

7509-8509. Woodwind Pedagogy. (3). Pedagogical and technical aspects of woodwind instruments; materials and methods for each woodwind instrument; embouchure, breathing, tone, production, intonation, dynamics, care, and repair.

7510. Advanced Suzuki Piano Pedagogy. (3). Analysis of pedagogic materials and fundamental techniques introduced in Volumes VI-V of the Suzuki Piano School and pieces traditionally used following

Volume VII. Particular emphasis on pedal technique, ornamentation, arpeggios, supplemental pieces, and preparation for auditions and competitions. Continued observation of lessons and practicum teaching. PREREQUISITE: MUSE 7505 or permission of instructor.

7511. Projects in Piano Pedagogy. (1-3). Individual projects designed to explore problems of teaching under supervision. May be repeated for credit when the topic varies. PREREQUISITE: permission of instructor.

7601. Introduction to Suzuki Talent Education. (3). Suzuki philosophy and method; educating Suzuki parents, setting up a program, teaching beginning steps in preparing students for the Twinkle variations and Suzuki Book I.

7602. Suzuki Violin Literature and Technique I. (3). Analysis of pedagogical materials and fundamental techniques introduced in volumes I-IV of Suzuki Violin School; exploration of various reading methods, introduction of music theory concepts, two- and three-octave scales, two-octave arpeggio series, and circle of keys.

7603. Suzuki Violin Literature and Technique II. (3). Analysis of pedagogical materials and fundamental techniques introduced in volumes V-VI of Suzuki Violin School; two-octave major and minor scales and arpeggios, all three-octave major and minor arpeggios, and exploration of more advanced reading methods.

7604. Advanced Suzuki Violin (3). Analysis of pedagogical materials and fundamental techniques introduced in volumes VII-VIII of Suzuki Violin School; all three-octave major and minor scales in circle of keys, two-octave chromatic scales, three-octave arpeggio sets, all major and minor two-octave doublestop scales.

7999. Thesis. (1-3).

8999. Dissertation. (1-9).

**Grades of S, U, or IP will be given.*

APPLIED MUSIC (MUAP)

8260-69. Special Topics in Applied Music. (1-3). Selected topics in Applied Music. May be repeated with change of topics.

801. Individual Studies in Applied Music. (1-3). Directed individual instruction in an applied area not listed under the MUAP course prefix. May not exceed 6 hours credit.

002. Chamber Music. (1).

7101-7108. Large Graduate Ensembles. (1).

101. Wind Ensemble

102. Orchestra

103. University Singers

104. Opera Chorus

105. Oratorio Chorus

106. Concert Band

107. Jazz Ensemble

108. Opera Workshop

7201-7213. Small Graduate Ensembles. (1).

201. Brass Ensemble

202. Jazz Combo

203. Chamber Music for Pianists

204. Percussion Ensemble

205. Contemporary Chamber Players

206. Orff Ensemble

207. String Ensemble

208. Camerata Players

209. Camerata Singers

210. Opera Soloists

211. Woodwind Ensemble

212. Collegium Musicum

213. Jazz Vocal Ensemble

May be repeated for credit.

99. Chamber Music Recital. (1).

80-89-8260-89. Special Topics in Applied Music. (1-3). Selected topics in Applied Music. May be repeated with change of topic.

20-8620. Independent Study in Symphonic and Operatic Conducting. (3). Detailed study of advanced conducting techniques including styles, mechanics, score reading and preparation, and rehearsal techniques and organization. Practical experience in orchestral and operatic conducting. May be repeated for credit. PREREQUISITES: MUAP 7701 and/or permission of instructor.

7622-8622. Independent Project in Opera Direction. (3). Actual staging or musical direction of an opera workshop or opera theatre production. May be repeated for credit. PREREQUISITE: MUAP 7623 and permission of instructor.

7699-8699. Production Practicum. (3-6). Required of majors in Opera and Conducting and Opera Production and Directing.

7701-8701. Advanced Conducting. (3). Conducting the concert band, the symphony orchestra, and the chorus in the larger musical forms. Emphasis on interpretation. May be repeated for credit. PREREQUISITE: Permission of instructor. \$60.00 instruction and lab fee.

7899-8899. Lecture Recital. (1-3). Student must be concurrently enrolled in an appropriate applied music course. All policies relating to dissertations are applicable to lecture recitals.

7901-8901. Lecture Recital Research. (1-3). Preparation of research document from which material for lecture recital is to be drawn. Topics to be approved by major professor and appropriate division coordinators. All policies relating to dissertations are applicable to this course.

7999-8999. Recital. (1-3). Student must be concurrently enrolled in an appropriate applied music course.

8002. Seminar in Performance Problems. (3). Study of literature and material for the performances necessary to prepare for the qualifying examination. Preparation of the dissertation recitals. PREREQUISITE: Admission to curriculum in performance. May be repeated for credit.

**Grades of S, U, or IP will be given.*

(INDIVIDUAL LESSONS)

FEES: See Chapter 3 of this bulletin. Fees are paid to the University at the office of the Business Manager.

CREDITS AND GRADES: A full hour lesson will be given all persons enrolled in graduate applied music, regardless of credit-hours awarded. Music Education majors, applied music minors, and applied music electives will be allowed to register for two hours of credit only. Applied majors may register for two to six hours of credit, as permitted. Grades are awarded in accordance with the jury system and have the same significance as in any other subject. All graduate applied music juries shall be scheduled for fifteen minutes.

REGISTRATION: Students will register for individual lessons at the same time and the same manner that they register for other courses.

Individual Lessons may be repeated for credit in subsequent semesters, but not for the purpose of improving the grade originally earned.

Instrument	Music Education Majors, Applied Music Minors, Applied Music Electives.	Applied Music Majors, Applied Music Minors, Applied Music Electives
	No Recital Required 1-2 Hours Credit	Recital Required 2-6 Hours Credit
Trumpet	6111	7111/8111
Cornett	6151	
Sackbut	6161	
Horn	6121	7121/8121
Trombone	6131	7131/8131
Tuba	6141	7141/8141
Piano	6311	7311/8311
Harpsichord	6321	7321/8321
Organ	6331	7331/8331
Percussion	6411	7411/8411
Violin	6511	7511/8511
Baroque Violin	6512	7512/8512
Viola	6521	7521/8521
Cello	6531	7531/8531
Bass	6541	7541/8541
Guitar	6551	7551/8551
Harp	6561	7561
Viola da Gamba	6571	7571
Voice	6611	7611/8611
Flute	6711	7711/8711
Oboe	6721	7721/8721
Clarinet	6731	7731/8731
Saxophone	6741	7741/8741
Bassoon	6751	7751/8751
Recorder	6761	

**Grades of S, U, or IP will be given.*

Theatre and Dance

ROBERT A. HETHERINGTON, A.B.D., M.A. *Chair*
Room 143, Theatre and Communication Building

SUSAN C. CHRIETZBERG, M.Ed.
Coordinator of Graduate Studies
(901) 678-2523

E-Mail: theatrelib@cc.memphis.edu

MEMBERS

- GLORIA D. BAXTER, *Professor*
M.A. (1965), Northwestern University [2000]
- SUSAN C. CHRIETZBERG, *Associate Professor*
M.Ed. (1968), Middle Tennessee State University [2003]
- PAMELA A. GOSS, *Assistant Professor*
M.F.A. (1990), Northwestern University [2003]
- ROBERT A. HETHERINGTON, *Professor*
M.A. (1976), A.B.D. (1979), Northwestern University [2003]
- DOUGLAS J. KOERTGE, *Associate Professor*
Ph.D. (1973), University of Illinois [2003]
- MOIRA J. LOGAN, *Associate Professor*
M.F.A. (1972), Sarah Lawrence College [2004]
- JOHN J. McFADDEN, JR., *Professor*
M.F.A. (1975), The Pennsylvania State University [2000]

ASSOCIATE MEMBERS

- STEPHEN W. HANCOCK, *Assistant Professor*
M.F.A. (1984), The Pennsylvania State University [2004]
- JOANNA P. HELMING, *Associate Professor*
M.A. (1967), Memphis State University [2000]
- HOLLY C. LAU, *Associate Professor*
M.F.A. (1991), Ohio State University [2002]
- ANITA JO LENHART, *Associate Professor*
M.F.A. (1985), Florida State University [1999]
- ALVITA E. MARTIN-FRIAR, *Assistant Professor*
M.F.A. (1991), University of South Carolina [2004]
- MICHAEL S. O'NELE, *Assistant Professor*
M.F.A. (1998), University of Missouri-Kansas City [2004]

- I. The Department of Theatre and Dance offers graduate programs leading to the Master of Fine Arts degree in Theatre. Within the M.F.A. degree in Theatre, training is available in directing and in design and technical production.

The University of Memphis is an accredited institutional member of the National Association of Schools of Theatre.

II. M.F.A. Degree Program

A. Program Admission

Admission to the program is competitive and is not automatic upon meeting minimum admission requirements. Students are selected from the pool of qualified applicants; the number of students admitted yearly depends on the availability of program resources required to maintain a high level of student/faculty contact and professional training.

Procedures include:

1. Admission to the Graduate School. Note that the Department of Theatre and Dance requires a grade point average of at least 2.5 from an accredited undergraduate institution and will accept scores from either the Miller Analogies Test or the Graduate Record Examination.
2. Submission of a separate departmental application identifying prior theatre education and experience and professional goals.
3. An interview with appropriate program faculty either at the university or at a regional or national conference.

Departmental applications are available upon request from the Department of Theatre and Dance.

B. Degree Requirements

1. Successful completion of a minimum of 60 semester hours of graduate credit approved by the student's Graduate Advisory Committee. A minimum of 70% (42 hours) of the total required hours must be 7000 level courses. A minimum GPA of 3.0 is required for graduation.
2. All students in the program must take the following core courses: THEA 7564, Studio in Theatrical Collaboration and Style; 7581, Seminar in Dramatic Theory and Criticism; and 7582, Analysis of Dramatic Literature.
3. Satisfactory completion of a committee-approved qualifying artistic project—the Qualifier Project.
4. Satisfactory completion of a committee-approved major artistic project—the Practicum Project.

5. Satisfactory completion of a committee-approved internship in a professional setting: THEA 7600.
6. Satisfactory completion of a comprehensive examination.

C. Graduate Advisory Committee

Each student will have a Graduate Advisory Committee. The functions of the committee shall be:

1. To approve the three-year Plan of Study (which may include remedial work).
2. To monitor academic and artistic progress.
3. To monitor quality and quantity of participation in the theatre production program.
4. To approve and evaluate the Qualifier Project, the Production Practicum Project, the internship, and the comprehensive examination.

D. Annual Progress Review

Progress in the M.F.A. program involves more than the successful completion of academic course work. Artistic progress and engagement in the theatre production program of the department are also required.

1. M.F.A. Portfolio Review: Each year all design students will meet with the design faculty and all directing students with the directing faculty for Portfolio Review. At that time, the student's competencies, artistic progress, and professional presentational skills will be evaluated.
2. Annual Graduate Review: Following the end-of-year Graduate Advisory Committee meeting with each student, the full faculty will meet to review the status and progress of each student. Possible outcomes of the evaluation process include: (a) continuance in the program without condition; (b) continuance in the program with conditions; or (c) non-continuance in the program.

Note: A more detailed discussion of program requirements may be found in the Department of Theatre and Dance Graduate Policy Manual available from the department office.

THEATRE (THEA)

6210-19. Special Topics in Theatre. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated for maximum of 9 hours when topic varies.

6401. Children's Literature in Performance. (3). Adaptation of children's literature for performance in theatrical and educational settings; includes styles of literature, principles of performance, and production of material designed for young audiences. May be repeated for up to 6 hours credit with permission of instructor.

6441. Performance Repertory. (3). Group performance in dramatic and narrative theatre styles, dance and theatre movement. Repeatable for a maximum of 9 hours. PREREQUISITE: Prospective students must audition for and be cast in Memphis Moving Line Company.

6457. Interpretive Styles. (3). Exploration of performance style as it evolves from language, structure, and style of the literary text. Materials for performance will vary each semester and may alternate among the genres of prose fiction, poetry, and period drama. Repeatable for a maximum of 9 hours when topic varies. Offered alternate years. PREREQUISITE: Permission of instructor.

6501. Advanced Movement Styles. (3). Advanced study in physical theatre styles. Varied semester topics: performance art; mask performance; fighting styles for period weapons; and physical theatre techniques for directors, choreographers, teachers. Repeatable for maximum of 6 hours when content varies. PREREQUISITE: permission of instructor.

6503. Creative Dramatics. (3). Basic techniques and theories for the use of dramatization in elementary and secondary education. Topics include socio-drama, dramatization of school subjects and daily concerns, and improvisation and creation of dramatic plays.

6514. Theatrical Rendering Techniques. (3). Materials and techniques for rendering theatrical space and scenic, costume, lighting and properties design elements.

6515. Scene Painting. (3). Lecture laboratory course covering the techniques of painting scenery for the stage. Offered alternate years.

6516. Technical Direction. (3). Lecture/laboratory for theatre technicians to include production organization and safety, engineering rigging, materials control, and supply ordering. Offered alternate years.

6531. Acting Styles. (4). The development of acting styles as influenced by the environments of historical periods. Offered alternate years.

6532. Advanced Acting Styles. (4). Continued work in acting styles. Offered alternate years.

6551. Theatre History-Classic. (3). Shaping forces and theatrical forms in Western civilization from Greek times to Romanticism. Offered alternate years.

6552. Theatre History-Modern. (3). Continuation of 6551 to the present. Offered alternate years.

6554. Visual History for Theatrical Design. (3). Design aesthetics of selected historical periods as applied to theatrical design. May be repeated for a maximum of 6 hours credit.

6555. Technical Production Studio: Theatre Technology. (3). Lecture/laboratory using traditional and contemporary materials and scenic technologies including rigging, metals and welding, wood working, and plastics. PREREQUISITE: 3511 or permission of instructor.

6556. Technical Production Studio: Lighting. (3). Technical principles that support areas of theatrical lighting design; includes instrumentation and equipment, electricity and electronics, control systems, operation and maintenance principles and procedures for stage electricians.

6557. Technical Production Studio: Costume. (3). Intermediate costume construction techniques employing both traditional and experimental methods for sewing; brings costume design from concept to reality. PREREQUISITE: THEA 3562 or permission of instructor.

6571. Playwriting. (3). Theory and principles of writing plays for the stage. Practice in writing either the short or long play. Offered alternate years.

6592. Theatre Architecture & Facilities Planning. (3). Processes and techniques employed by theatre planners in design and construction/renovation of theatrical spaces and structures. Includes survey of theatre forms, historical development of theatrical structures and spaces, programming methods and procedures, specification, renovation techniques, multi-use structure concepts, and consultation procedures and practices. Offered alternate years. PREREQUISITE: Permission of instructor.

6595. Technical Production Studio: Sound. (3). Technical principles that support areas of theatrical sound design; includes digital and analog equipment, audio signal theory and technologies, systems design, software, operational principles and procedures for theatrical sound engineers.

5631. Acting for Film and Television. (4). Educational experience for the actor in the media of film and television, concentrating on dramatic, commercial, and documentary areas. PREREQUISITE: Permission of instructor. Offered alternate years.

7210-19-8210-19. Special Topics in Theatre. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated for maximum of 9 hours when topic varies.

7431-8431. Seminar in Directing Narrative Theatre. (3). Theory and technique for directing literary texts not originally written for the theatre. Stage adaptations of short stories, novels, and compiled scripts. Script preparation and directing projects required. Repeatable or a maximum of 6 hours. Offered alternate years. PREREQUISITE: THEA 7521 or permission of instructor.

7440-8440. Seminar in Critical Studies. (3). Advanced studies in theatre criticism, dramatic literature, and theatre history. Methods of scholarly research appropriate for the dramaturg and producing artist. Semester topics alternate among studies of selected authors, periods, genres, and theatre movements. Repeatable for a maximum of 9 hours when topic varies. Offered alternate years. PREREQUISITE: Permission of instructor.

521-8521. Stage Direction. (3). Processes of stage direction from script interpretation to rehearsal and performance with emphasis on the collaborative interplay between stage director and designer; traditional and non-traditional theatrical modes; directing projects required. Offered alternate years.

526-8526. Directing Studio. (3). Seminar/practicum investigation of advanced techniques of the stage director; styles of production, creative interpretation of established dramatic literature, and/or creation of original work for the stage. Directing project required. Repeatable for a maximum of 9 hours. PREREQUISITE: THEA 7521.

551-8551. Seminar in Theatre Aesthetics. (3). Aesthetic theories affecting the theatre from Classical Greece to the present. Special attention to the study of interrelationship between theatre and the other arts. May be repeated for maximum of 6 hours. Offered alternate years.

7553-8553. Styles of Directing. (3). Production styles and methodologies evidenced in art of major modern directorial innovators. Directing projects required. Repeatable for a maximum of 6 hours with permission of instructor. Offered alternate years.

7554-8554. Seminar in Directing. (3). Conceptual and practical studies in stage direction with emphasis on the collaborative interplay between stage director and actor. Directing projects required. Repeatable for a maximum of six hours with permission of instructor. Offered alternate years. PREREQUISITE: Permission of instructor.

7560-8560. Directed Studies in Design and Technical Production. (3). Individually supervised design and technical production projects in areas of scenery, costumes, lighting, and sound. Repeatable for a maximum of 9 hours. PREREQUISITE: Permission of instructor.

7561. Design Studio: Scenery. (3). Studio explorations of creative design process and its relation to theatrical space and environment. Emphasis on analysis, creative expression, and portfolio development involving two- and three-dimensional scenic design projects.

7562. Design Studio: Lighting. (3). Aesthetic principles and practical methodologies for design of lighting; expression of style in various theatrical forms and modes of production; includes research, criticism, project work. PREREQUISITES: THEA 6556 or permission of instructor.

7563. Design Studio: Costume. (3). Exploration and application of aesthetic principles of costume design. Special consideration to interpretation of character and period through line, color, and fabric, employing variety of rendering processes in the studio environment.

7564-8564. Studio in Theatrical Collaboration and Style. (3). Exploration of elements of style as they pertain to concept development for theatrical production; engagement in dynamics of the collaborative process.

7566. Design Studio: Sound. (3). Seminar and practicum in the style and process of theatrical sound design. PREREQUISITE: THEA 6595 or permission of instructor.

7568. Computer Applications for Theatre. (3). The computer and its role in theatrical production. Families of software and their application to theatrical production activities. Text, numeric, and data processing concepts and applications. PREREQUISITE: permission of instructor.

7571-8571. Advanced Playwriting. (3). Continuation of theories and practice of playwriting with the object of achieving a finished script, ready for production. PREREQUISITE: THEA 6571. May be repeated for maximum of 9 hours. Offered alternate years.

7581-8581. Seminar in Dramatic Theory and Criticism. (3). Major documents in dramatic theory and criticism from Aristotle to present. Offered alternate years.

7582-8582. Analysis of Dramatic Literature. (3). The dramatic text as basis for unified and purposeful production concept; advanced techniques of director and scenographer used to solve artistic/practical problems of specific plays. Offered alternate years.

7592-8592. Theatre Planning & Management. (3). Principles of theatre planning and management for educational and regional theatres. May be repeated for maximum of 9 hours. Offered alternate years.

7600-8600. Internship. (1-3). Supervised work completed in a professional setting. Repeatable for a maximum of 6 hours. PREREQUISITE: Permission of the advisory committee.

7800-8800. Research in Theatrical Practice. (3). Research, practice, methodology, or pedagogy in theatre. Open only to graduate assistants. May be repeated for a maximum of 12 hours.

7993-8993. Special Problems. (1-3). Directed individual investigation of special research. PREREQUISITE: Permission of instructor.

7994-8994. Special Problems. (1-3). Directed individual investigation of special research. PREREQUISITE: Permission of instructor.

7995-8995. Production Practicum. (3-6). Creative performance or production project suitable for public presentation and/or a practical application. Project to be determined in consultation with and directed by the student's supervisory committee.

†Grades of S, U, or IP will be given.

DANCE (DANC)

6101. Dance Repertory. (3). Exploration of stylistic, technical, and expressive elements in rehearsal and performance. May include notated works, faculty, and guest artist choreography. May be repeated for maximum of 9 hours. **PREREQUISITE:** Permission of instructor.

6201. Dance Composition. (3). Investigation of movement sources and development of elements of choreographic craft. Emphasis on solo and duet work. May be repeated for maximum of 6 hours with permission of instructor. **PREREQUISITE:** Permission of instructor. Offered alternate years.

6202. Advanced Dance Composition. (3). Investigation of movement sources and choreographic craft for group forms from concept development through rehearsal and performance. May be repeated for a maximum of 6 hours. **PREREQUISITE:** DANC 6201 or permission of instructor.

6301. Directed Studies. (1-3). Individual study, research, or practicum. May be repeated for maximum of 12 hours. **PREREQUISITE:** Permission of instructor.

6402. Dance Education in Diverse Settings. (3). Theory, methods, and materials for teaching Modern and Creative Dance in schools, dance studios, arts programs, and community settings. Includes current research in aesthetic education and curriculum development. **PREREQUISITE:** permission of instructor.

6000-6029. Special Topics in Dance. (1-3). Topics are varied and announced in *Schedule of Classes*. May be repeated for maximum of 9 hours when topic varies.

The College of Education

NATHAN L. ESSEX, Ph.D.,
Dean

KAREN WEDDLE-WEST, Ph.D.
Assistant Dean for Graduate Studies

E-mail: kwyman@memphis.edu
Homepage: www.coe.memphis.edu/

GRADUATE ACADEMIC PROGRAMS

Department	Major	Concentration within Major	Degree Offered
Consumer Science and Education	Consumer Science and Education		Master of Science (M.S.)
	Clinical Nutrition		Master of Science (M.S.)
Counseling, Educational Psychology and Research	Counseling and Personnel Services	(1) School Counseling (2) Community Agency Counseling (3) Rehabilitation Counseling (4) Student Personnel Services	Master of Science (M.S.) Doctor of Education (Ed.D.)
	Counseling Psychology		Doctor of Philosophy (Ph.D.)
	Educational Psychology and Research	(1) Educational Psychology (1) Educational Research	Master of Science (M.S.) Doctor of Philosophy (Ph.D.)
Human Movement Sciences and Education	Human Movement Science	(1) Exercise and Sport Science (2) Health Promotion (3) Sport and Leisure Commerce	Master of Science (M.S.)
Instruction and Curriculum Leadership	Instruction and Curriculum Leadership	(1) Instruction and Curriculum (2) Instructional Design and Technology (3) Reading (4) Early Childhood Education (5) Special Education	Master of Science (M.S.) Doctor of Education (Ed.D.)
		(1) Early Childhood Education (2) Elementary Education (3) Secondary Education (4) Special Education	Master of Arts in Teaching (M.A.T.)
Leadership	Leadership and Policy Studies	(1) School Administration and Supervision (2) Leadership	Master of Science (M.S.)
		(1) Educational Leadership (2) Community Education (3) Policy Studies	Doctor of Education (Ed.D.)
	Higher and Adult Education	(1) Higher Education (2) Adult Education	Doctor of Education (Ed.D.)
Interdisciplinary	Education		Education Specialist (Ed.S.)

Individual program requirements described in the Graduate School Issue of the 1999-2001 Bulletin of The University of Memphis are subject to change. Please consult your department or the Office of the Graduate School for changes that may occur before publication of the next issue of this Bulletin; or consult the Graduate School website at: <http://www.people.memphis.edu/~gradsch> for the latest catalog updates.

Graduate programs in the College of Education prepare students to be leaders within their professional areas of education. Candidates for a degree must design a curriculum plan that has the approval of their major adviser, the department chair, and the Assistant Dean for Graduate Studies.

The College of Education offers degrees at the master's, specialist, and doctoral levels. The master's degree programs are the Master of Arts in Teaching (M.A.T.) and Master of Science (M.S.). Offered at the post-master's level are the degrees of Education Specialist (Ed.S.), Doctor of Education (Ed.D.), and Doctor of Philosophy (Ph.D.) with a major in Counseling Psychology or Educational Psychology and Research.

Graduate degrees in the College of Education are available in the departments of Consumer Science and Education; Counseling, Educational Psychology and Research; Human Movement Sciences and Education; Instruction and Curriculum Leadership; and Leadership.

ment Sciences and Education; Instruction and Curriculum Leadership; and Leadership.

For specific information concerning majors, admissions criteria, areas of concentration, course requirements, etc., students should review the program descriptions which are found under the departmental listings in this Catalog. See the list of academic programs above for majors and concentrations.

Master's Degree Programs

The College of Education offers programs leading to the Master's degree in the departments of Consumer Science and Education; Counseling, Educational Psychology and Research; Human Movement Sciences and Education; Instruction and Curriculum Leadership; and Leadership.

Master of Science Degree (M.S.)

The Master of Science degree is available to individuals who are already licensed and want to expand their work in their teaching areas or individuals without licensure who desire to work in education-related settings but do not need teacher licensure. This degree is directed toward the development of competencies necessary for leadership and advancement in K-12 settings and fields related to education.

Master of Arts in Teaching Degree (M.A.T.)

The Master of Arts in Teaching degree is designated for people with outstanding undergraduate records who are seeking initial teacher licensure at the graduate level. It is also available to those already licensed who seek additional licensure in one or more areas. Students may pursue licensure in special education, early childhood, elementary or secondary fields.

Teacher Licensure

Individuals who wish to acquire teaching licensure without pursuing a degree may enroll in the licensure program.

Admission to Master's Degree Candidacy

Upon notification of admission to the Graduate School, the student may enroll and begin to take courses. However, a student's initial enrollment in no way should be taken to mean acceptance for degree candidacy. To become a candidate for a degree, the student must file an "Application for Admission to Master's Degree Candidacy" form which is available in the Graduate School or in the Dean's Office. For information on the procedures for completing degree candidacy forms, students should consult their major adviser.

Appointment of Adviser

Prior to initial enrollment, the student is advised to arrange an interview with the chair or a representative of the department in which the student plans to major. At this meeting the student may be assigned an adviser who will help the student in planning a program of studies. Some departments appoint an adviser upon admission.

Workshops and Independent Study Credits

The maximum combined credit in "Independent Study" and "Workshop" courses that can be applied to the master's degree is 10 semester hours with no more than 6 semester hours applying to the major. Seven semester hours of credit in "Independent Study" courses may be applied to master's degree requirements, but no more than 4 of these hours may be taken in either the major or the collateral area.

If the student should elect to take "Workshop" courses and no "Independent Study" courses, only 6 workshop hours could apply to the major.

Other Requirements

For all programs, a minimum of 70% of the total required hours must be taken at the 7000 level. At least 12 semester hours of these must be taken in the major.

Program of Studies

Each student, in consultation with an adviser, will plan a program of studies leading to the fulfillment of the requirements for one of the degrees listed below.

Minimum requirements for the Master of Science degree are:

Major:

Content for Specialty	18-21 hours
Research (EDPR 7521 or 7523)†	3 hours
Electives (selected in consultation with student's adviser)	12-15 hours
Total	36 hours

†EDPR 7521 or 7523 must be taken within the first 15 hours of the program.

Minimum requirements for the Master of Arts in Teaching degree are:

Major:

Content for Specialty (Includes thesis or special project)	30-46 hours
Research	3 hours
College Core (Cultural Foundations or Educational Psychology)	3 hours
Supportive Studies	6-9 hours
Total	43-57 hours*

*Students enrolled in an articulation agreement between a designated college and The University of Memphis may be required to take fewer hours.

Substitutions for Required Courses

Any substitutions for departmental required courses in the major must be approved by the adviser and the department chair. Substitutions which effect college or degree requirements must be approved by the adviser, the department chair and the Assistant Dean for Graduate Studies.

Master's Thesis

A thesis of 3 to 6 semester hours may be presented as partial fulfillment of degree requirements. Each degree candidate must enroll for a minimum of 3 hours thesis credit each semester until the thesis is completed. A student who fails to complete the thesis at the end of the academic semester following registration for the total credits allowed to count toward the degree will be required to renew his/her status. In order to remain in active status, the candidate will be required to register for 1 hour of thesis credit each academic semester until the thesis is completed. (The summer session will be considered an academic semester for this purpose.) A student must be registered for 3 hours of thesis credit in the semester of graduation. Credit will be posted upon the completion and acceptance of the thesis, but no more than 6 hours will be counted toward degree requirements for a master's thesis. This requirement may be waived for any semester the adviser is not on campus or for other reasons approved by the major adviser, the department chair, and the Assistant Dean for Graduate Studies of the College of Education.

Students in the M.A.T. program may not enroll in thesis credit during the semester of student teaching.

Thesis Guidelines

Theses must be prepared according to guidelines specified by the College. For specific information, a student should consult his/her major professor.

Master's Project

Students choosing to complete a Master's project for the M.A.T. degree must enroll in 3 hours of Master's project credit. A grade of IP (In Progress) will be assigned until the special project is completed. Students in the M.A.T. program may not enroll in the Master's project credit during the semester of student teaching.

Master's Comprehensive Examination

Before being recommended for graduation, every candidate for the master's degree is required to pass a final comprehensive examination. It may be oral or written or both, at the discretion of the department.

The comprehensive exam is administered each semester and during the summer session. The student must consult the *Schedule of Classes* of the semester the student plans to take the exam for information about application deadlines and the exam schedule. To be permitted to take the exam, the student must sign up in the department office before the indicated deadlines.

Departmental requirements with reference to thesis, research, and course requirements for each of these degree programs are found under the appropriate departmental sections in the Catalog.

Teacher Education Licensure at the Graduate Level

The Master of Science degree program is used for securing additional endorsements in the areas of Beginning Administration K-12(B), Professional Administration K-12, Counselor K-12, Special Teacher of Reading (grades K-8 or 7-12), Early Childhood PreK-3, Special Education Modified, Special Education Comprehensive, Special Education Early Childhood, and endorsements at the secondary level. The applicant who wishes to add these areas must complete an approved program and be recommended by the College.

To obtain a Tennessee License with an endorsement in one of the following areas: School Psychologist, or Special Education Speech and Language PreK-12, the applicant must complete the approved program and be recommended by the College.

Changes in teacher licensure requirements are being proposed by the State Board of Education effective for all students entering Fall 1999; thus teacher licensure programs will change in response to these mandates.

Initial Teacher Licensure

Two graduate level teacher preparation programs for initial licensure are offered by the College of Education. The Master of Arts in Teaching (M.A.T.) program is the degree through which initial teacher licensure at the graduate level can be obtained. The licensure only program is for students seeking initial teaching licensure but not a master's degree. Both programs are available for Early Childhood (PreK-3), Elementary (1-8), Secondary, Special Education: Modified or Comprehensive (K-12), Special Education: Early Childhood (PreK-3), and endorsements at the secondary level.

Adding New Endorsement Areas

The Master of Arts in Teaching degree may also be pursued by students wishing to change their teaching fields. Students pursuing this degree will be required to meet the departmental prerequisites and teaching licensure requirements. Students may prepare in more than one discipline if they are seeking teaching endorsements in more than one field.

Internships/Student Teaching

Students seeking initial licensure and some add-on endorsements must complete at least one semester student teaching/ internship requirements in the placements coordinated and approved by the Coordinator of Field Experiences in the College of Education. Students seeking most licensures may not student teach/intern during the summer semester.

Policies Governing Licensure at the Graduate Level

Students who have received a bachelor's degree from an accredited institution that did not qualify them for a teacher's license may become eligible for licensure by enrolling as a graduate master's student in the M.A.T. degree program or by enrolling as a graduate non-degree student in the licensure program and completing the requirements for the program according to the current catalog. These candidates should confer with the coordinator of M.A.T. licensure program concerning individual program requirements. Before the College of Education will recommend a candidate to the Tennessee State Department of Education for teacher licensure, at least 50% of the professional education requirements for licensure must be completed at The University of Memphis.

Procedures for Admission to the Graduate Level Teacher Preparation Programs

The student must apply for admission to the Graduate School and to the Master of Arts in Teaching degree program or the licensure program. When approved, the student will be assigned a graduate adviser.

For initial licensure the student must have an appropriate undergraduate major for the area of teaching licensure being sought.

Adding an endorsement at the graduate level which requires The University of Memphis's recommendation may be accomplished by completing the requirements of the approved program. Information can be obtained from the teacher licensing adviser.

Simultaneously with admission to the M.A.T. or teacher licensure program, the student must apply for and meet standards required for admission to the Teacher Education Program (TEP). Only Level 1 M.A.T. courses should be taken prior to admission to TEP. Students must be fully admitted to TEP one full semester before application to student teaching and internship is submitted. Application for student teaching/ internship is submitted the semester before enrolling in student teaching/ internship.

For additional information, consult the general adviser in the College of Education.

The Master of Arts in Teaching degree may be earned with the completion of a thesis or Master's project. The acceptability of the student's overall performance in the M.A.T. program will be demonstrated through a written or oral examination near the end of the student's program.

For a more detailed explanation of the program, see the Department of Instruction and Curriculum Leadership program description.

Post-Master's Degree Programs

The post-master's degree programs of the College of Education require the candidate to have a clear professional goal and a commitment to scholarship, leadership, and excellence. To accomplish this, a close, continuous professional interac-

tion between the candidate, faculty, and fellow students is an integral part of the program of study.

To be admitted to post-master's degree candidacy in the College of Education, the student must first meet all Graduate School requirements and then complete a candidacy file in the department in which admission is sought.

Education Specialist (Ed.S.)

The Education Specialist is an interdisciplinary degree designed to provide an individualized, flexible program of studies for the educator/practitioner in either a school or non-school setting, whose academic interests are aimed at specific and individual career goals and needs. It offers opportunities for advanced professional specialization including a relevant culminating experience or a thesis. Studies may be focused in the departments of Counseling, Educational Psychology and Research, Instruction and Curriculum Leadership, and Leadership. A collaborative Ed.S. is offered with The Department of Psychology.

Doctor of Education (Ed.D.)

Doctor of Education programs in the College of Education are designed to improve the competency of teachers, counselors, supervisors, and administrators; to serve the career needs and goals of individuals in education-related fields; to encourage research in a student's area of concentration; and to initiate and implement programs involving the school and the community. The programs provide both breadth and depth of preparation through a flexible combination of academic specialization, interdisciplinary study, and significant research.

Doctor of Philosophy (Ph.D.)

The Ph.D. in Counseling Psychology or Educational Psychology and Research is offered by the Department of Counseling, Educational Psychology and Research. It is designed to meet the needs of candidates who wish to seek licensing as counseling psychologists or candidates preparing for research and college faculty positions.

Admission to Post-Master's Candidacy

Admission to the Ed.S., Ed.D., and Ph.D. programs is handled by the department in which the student wishes to concentrate. After completion of the department's candidacy file, the department admissions committee will act on the application and notify the student of its action.

Appointment of Advisory Committee

When admitted to candidacy, the student should consult with the department chair and the temporary adviser in order to secure the appointment of a permanent major adviser who will also serve as chair of the program advisory committee. The department chair, following consultation with the student and the major adviser, will make a recommendation to the Assistant Dean for Graduate Studies concerning the appointment of a graduate program advisory committee to assist the student in planning a complete program of studies. Upon approval by the Assistant Dean for Graduate Studies, the appointment will be forwarded to the Dean of the Graduate School.

The student's program advisory committee for the Ed.S., Ed.D., and Ph.D. degrees shall be composed of at least three members. Each committee member must be a member of the Graduate Faculty at The University of Memphis.

Program of Studies

All programs of study for the Ed.S., Ed.D., and Ph.D. degrees are individually designed by the student and the program advisory committee to accomplish the student's educational goal and insure mastery of requisite knowledge, skills, and dispositions for the discipline.

Time Limitations

Each student, in consultation with the program advisory committee, will plan a complete program of studies. The program of studies must be placed on file with the Assistant Dean for Graduate Studies before the end of the semester immediately following admission to the program. No doctoral student may be considered as officially in residency unless the student has filed a program of studies, signed by the program advisory committee.

The student's program of studies for the Ed.S. degree must include a minimum of 33 semester hours earned no more than six years prior to the date of graduation.

The student's program of studies for the Ed.D. or Ph.D. degree must include a minimum of 54 semester hours earned no more than ten years prior to the date of graduation.

Acceptance of Transfer Credit

Credit earned at another institution must be presented for consideration at the time the student is accepted for candidacy. Upon approval by the student's program advisory committee, the credit will be transferred to apply toward the Ed.S., Ed.D., or Ph.D., provided that the credit meets the general University and specific program requirements.

Approved transfer credit may be accepted for not more than 6 semester hours of post-master's degree course credit for the Ed.S. degree and 12 semester hours of post-master's degree credit for the Ed.D. or Ph.D. degree.

Other Requirements

The maximum combined credit in Independent Study and "Workshop" courses that can be applied to Ed.S. degree requirements is 9 semester hours.

The maximum combined credit in Independent Study and "Workshop" courses that can be applied to the Ed.D. degree requirements is 18 semester hours.

Planning the Program

Minimum requirements for the Education Specialist degree are:

Major

Content for Specialty (Including 6 hours culminating experience)	21 hours
College Core (Complete one three-hour course in research* and one three-hour course in educational psychology appropriate to the area of study)	6 hours
Electives	6 hours
Total	33 hours

Minimum requirements for the Doctor of Education degree are:

Major

Content for Specialty (Includes 9-12 hours dissertation)	42-45 hours
Research Core* (EDPR 8541, 8542 and 3-6 hours of research electives)	9-12 hours
Total	54 hours

*A master's level introduction or research course is assumed, (EDPR 7521 or 7523).

Changes in Program of Studies

Any changes to be made in a program of studies must be submitted on the appropriate form and must have the approval of the program advisory committee, the department chair, and the Assistant Dean for Graduate Studies.

Residency

Students working toward the doctoral degree must fulfill the University and College residency requirement after filing a program of studies.

Purpose

The purpose of residency is to provide the doctoral student with significant time for sustained contact with faculty members. An expected outcome is the acquisition of skills of inquiry, an opportunity for research, and the incorporation of professional values into the experience that the student brings to graduate school. Also, it facilitates the creation of a cohesive climate in which inquiry becomes the linking feature of the graduate student experience. In short, residency is expected to be a vehicle for socialization into the shared community of professional life. At the heart of that community lies a commitment to sustained inquiry that extends beyond the period of doctoral preparation and into the student's lifetime work, either as a practitioner or as one who demonstrates leadership based on a foundation of inquiry.

Doctoral Residency Policies

1. A doctoral student must select one of the following course enrollment options:
 - a. The student will maintain two semesters of continuous enrollment of 9 hours per semester. The enrollment requirement may be satisfied by enrolling in fall, spring, and summer semesters.
 - b. Three semesters of continuous enrollment of 6 hours per semester;
 - c. Nine hours of enrollment per semester during two consecutive summers and at least 3 hours per semester during the intervening fall and spring semesters.
2. A plan for the scholarly product of residency will be developed by the student and major professor. The plan will be reviewed by the department.
3. The scholarly product plan of residency consists of the following elements:
 - a. The plan will be contained in a 3-5 page document.
 - b. It will contain an introduction to the problem area that the student will address during the coming period of residency. This introduction will include a specification of the problem, an indication of its importance, and a brief summary of pertinent literature placing the problem in its context. Relevant theoretical implications will be noted.

- c. It will detail a plan of action including projected time benchmarks to resolve the problem. It is expected that this plan will allow for a sustained and multifaceted inquiry that incorporates significant components derived from the literature and that have implications for the field of study.
- d. Tools of inquiry expected to be required in the course of completing the residency will be noted. If the candidate possesses these tools, some indication documenting the mastery of the tool component should be noted. If skills of inquiry are to be acquired during the course of the residency this must be noted.
- e. Faculty resources associated with each component of the plan must be indicated. It is expected that the student will be in contact with individuals who have been engaged in this area beyond the campus.
- f. The products of the residency will be noted. It is expected that the residency will lead to a paper submitted to a refereed journal or presented at a peer reviewed conference.
- g. A copy of the scholarly product of residency that has been approved by the major adviser must be filed with the Assistant Dean for Graduate Studies.

Timetable for Filing for Residency

Prior to beginning residency, the written plan must be filed. The plan must have the approval signatures of the chair of the candidate's program advisory committee and of the department chair. It must be submitted to the department office of the candidate's major for approval no later than the last day of graduate registration in the semester designated to count as residency. Students are expected to have satisfied requirements for admission to the doctoral program before filing a residency plan.

Comprehensive Examination for the Ed.S., Ed.D., and Ph.D. Degrees

When the candidate for the Ed.S., Ed.D., or Ph.D. degree has completed all course requirements or is enrolled in the last course in the candidate's program of study, exclusive of the culminating experience or dissertation, the candidate must pass a comprehensive exam, written and oral, covering the major and collateral fields of study. For Ed.D. and Ph.D. candidates, residency must be completed prior to taking the comprehensive exams. The student who passes the comprehensive exam will be designated as a Late Doctoral Candidate or Late Specialist candidate in the candidate's degree status.

Ed.S. Culminating Experience and Doctoral Dissertation

The Ed.S. degree candidate will present a six-hour culminating experience appropriate to the major area of specialization. This may be fulfilled through a thesis based on research related to the major, a field study of a significant problem, an organized internship, or a special project appropriate to the major.

An acceptable dissertation is a requirement for all doctoral degrees. The dissertation must embody the results of an extended research effort that is an original contribution. It should reflect the candidate's ability to conduct independent research and interpret in a logical manner the facts and phenomena revealed by the research. The student will be required to meet the specific regulations of the major department and of the Graduate School. The Ed.D. or Ph.D. degree candidate will present a dissertation for 9-12 hours' credit.

Enrollment Requirements

Each degree candidate must enroll for a minimum of 3 hours of field study, culminating experience, or dissertation credit each semester until the project is completed. A student who fails to complete the culminating experience/dissertation at the end of the academic semester following the registration for the total credits allowable will be required to renew academic status. In order to remain in active status, the candidate will be required to register for 1 hour of culminating experience or dissertation credit each academic semester until the project is completed. (The summer session will be considered an academic semester for this purpose.) A student must be registered for 3 hours of culminating experience or dissertation credit in the semester of graduation. Credit will be posted upon the completion and acceptance of the culminating experience or dissertation, but no more than 6 hours will be counted toward degree requirements for an Ed.S. culminating experience and no more than 12 hours for a doctoral dissertation.

This requirement may be waived for any semester the adviser is not on campus or for other reasons approved by the major adviser, the department chair, and the Assistant Dean for Graduate Studies of the College of Education.

Failure to remain on active status without an approved waiver will result in reevaluation of the candidate's status in the program by the program advisory committee.

Committee Membership for Supervision of the Dissertation

After completing the comprehensive examination, the candidate will form a dissertation advisory committee of at least four graduate faculty members. The dissertation advisory committee will direct the development of the candidate's prospectus, dissertation, and defense. The chair (major professor) must be a full graduate faculty member from the candidate's area of concentration within the major. At least one other committee member must be a faculty member in the candidate's major. The department chair, following consultation with the candidate and the major adviser, will make a recommendation to the Assistant Dean for Graduate Studies concerning the appointment of the dissertation advisory committee.

Doctoral Prospectus

In order to provide a relatively uniform framework for preparation of a doctoral prospectus, the College of Education has specified a format to be followed in its preparation. Copies of the format may be obtained from the major adviser or from the office of the Assistant Dean for Graduate Studies.

Once a prospectus is approved, it is expected that the study will be completed within three years; if not, the program advisory committee will reevaluate the candidate's status in the program.

"Early doctoral student" designation applies to all doctoral candidates from the time of formal admission to candidacy in the College of Education until the time of completion of course work and passing the comprehensive exam. At that time the candidate is redesignated as "late doctoral student."

Culminating Experience/Dissertation Guidelines

Culminating experiences and dissertations must be prepared according to guidelines specified by the College. For specific information, the student should consult his/her major adviser.

Final Examination (Culminating Experience/Dissertation Defense)

After the completion of the culminating experience/dissertation and all other prescribed work for the degree, all candidates will be given a final oral examination dealing primarily with the culminating experience/dissertation and its relation to the candidate's major field of study. This exam will be conducted by the student's culminating experience/dissertation advisory committee.

Graduate Assistantships

Graduate assistantships for post-master's students are available in most of the academic areas of the College of Education, and a limited number of graduate assistantships for master's students are available. All graduate assistantships are governed by the *Graduate School Handbook: Graduate Assistants*.

Active work and satisfactory progress toward a degree are necessary to hold an assistantship, and graduate assistants are required to be registered in each term in which they hold assistantships. Full-time graduate assistants take twelve hours of course work per semester and serve 20 hours per week on the assistantships.

Permission for graduate assistants to take fewer than twelve credit hours in a semester may be granted by the College of Education Assistant Dean for Graduate Studies upon the recommendation of the department chair. Permission to take more than twelve hours may be granted upon recommendation of the department chair and the College of Education Assistant Dean for Graduate Studies.

Consumer Science and Education

DIXIE R. CRASE, Ph.D., *Chair*
and *Coordinator of Graduate Studies*
(901) 678-2301

E-Mail: crase.dixie@coe.memphis.edu
www.coe.memphis.edu/coe/csced/csced.html

MEMBERS

- DIXIE R. CRASE, *Professor*
Ph.D. (1967), Ohio State University [2000]
LINDA ECK CLEMENS, *Professor*
Ed.D. (1994), The University of Memphis [2005]
CAROL MITCHELL, *Professor*
Ph.D. (1977), Texas Woman's University [2000]
ROBIN R. ROACH, *Associate Professor*
Ed.D. (1989), Vanderbilt University [2002]
MARY ANN SMITH, *Professor*
Ph.D. (1965), University of Tennessee [2000]
TERRA SMITH, *Assistant Professor*
Ph.D. (1997), Oklahoma State University [2003]
PAT M. STEVENS, *Associate Professor*
Ed.D. (1988), Mississippi State University [2000]
CAROLYN G. LITCHFIELD WORMS, *Professor*
Ed.D. (1976), Virginia Polytechnic Institute and State University [2000]

ADJUNCT MEMBERS

- JILL CHRISTINE KOSTKA
M.P.H. (1993), Tulane University [2000]
QUEEN COX
M.S. (1990), Memphis State University [2003]
KENNETH ALLAN KUDSK
M.D. (1976), Ohio State University [1999]
SUSAN MOREHEAD
M.S. (1974), Louisiana Tech University [1999]

MANNE K. POLLY

J.D. (1996), The University of Memphis [2002]

DEBORAH SLAWSON

M.S. (1990), The University of Memphis [2002]

AREN RINGWOLD-SMITH

M.S. (1996), The University of Memphis [2000]

ARIA M. SUN

M.S. (1997), The University of Memphis [2000]

ATHRYN C. WALL

M.S. (1976), University of Tennessee, Knoxville [1999]

MARGARET RUTH WILLIAMS

M.S. (1982), University of Mississippi [1999]

ETA J. ZABEL

Ph.D. (1998), Texas Women's College [2001]

The purpose of the Master of Science with a major in Consumer Science and Education is to provide an advanced educational option for both school personnel and other individuals preparing for, or pursuing, careers based on family and consumer sciences and marketing education subject matter. This degree serves all disciplines in family and consumer sciences and marketing education in an integrative, interdisciplinary advanced program that allows individualization.

The Department also offers the Master of Science degree with a major in Clinical Nutrition.

M.S. Degree Program - Major in Consumer Science and Education**A. Program Prerequisites**

1. Completion of an undergraduate major in one of the several specific areas of Consumer Science and Education or a closely allied field such as marketing, art, or science.
2. Completion of application procedures for admission to the Graduate School.
3. Satisfactory performance on the Graduate Record Exam.
4. Satisfactory undergraduate grade point average.
5. Completion of academic deficiencies in course work if, after faculty evaluation of transcripts, it is deemed necessary.

B. Program Requirements

1. A total of 36 semester hours is required of all students, six hours of which must include either thesis or internship in one specific area of Consumer Science and Education.
 - a. Eighteen semester hours are required in the major as a departmental core and consist of the following courses:

CSED 7212 Applied Nutrition for Health	(3)
CSED 7600 Entrepreneurship in Consumer Science and Education	(3)
CSED 7700 Professional Practices in Consumer Science and Education	(3)
CSED 7800 Consumer Issues: Family Systems Management	(3)
CSED 7996 Thesis	(6)

 or
 CSED 7400-7407 Internship in Consumer Science and Education (6)
 - b. A minimum of nine semester hours of 7000 level course work supportive of the major must be taken in a collateral area either outside or within the Department.
 - c. A minimum of nine semester hours of required research-related electives to include:

ID&T 7060 Microcomputers and Learning	(3)
---------------------------------------	-----

 or
 EDPR 7531 Computer as a Research Tool (3)
 and
 EDPR 7521 Introduction to Educational Research (3)
 EDPR 7541 Statistical Methods Applied to Education (3)
2. Successful completion of a written comprehensive examination for all students. Successful completion of an oral thesis defense for those electing the thesis option. Successful completion of an exit interview and/or presentation for those electing the internship option.

M.S. Degree Program - Major in Clinical Nutrition**A. Program Prerequisites**

1. Completion of an undergraduate major in foods and/or nutrition to include an American Dietetics Association (ADA) approved Didactic Program in Dietetics.
2. Acceptable undergraduate grade point average.
3. Acceptable scores on the Graduate Record Examination or on the Miller Analogies Test.
4. Completion of application procedures for admission to Graduate School.
5. Demonstration of interest in the field of clinical nutrition by letter, documentation of work experiences, and evidence of above average performance documented by letters of reference.
6. Enrollment limitation of 8 to 12 students per year.
7. An additional program fee is required for the internship.

B. Program Requirements

1. Coursework must be taken in sequence.
2. A total of 48 hours is required for completion of this major, six hours of which must be thesis and 12 hours of which must be internship and residency.
 - a. Twenty-four hours are required in the major as core and consist of the following courses:

CSED 7202 Current Issues in Foods and Nutrition	(3)
CSED 7205 Nutrition Assessment	(3)
CSED 7412 Cellular Nutrition I	(3)
CSED 7422 Cellular Nutrition II	(3)
CSED 7432 Nutrition and the Life Cycle I: Maternal, Infant, and Child Nutrition	(3)
CSED 7433 Nutrition and the Life Cycle II: Adolescent, Adult, and Geriatric Nutrition	(3)
CSED 7442 Clinical Nutrition Administration	(3)
CSED 7522 Advanced Food Systems Management	(3)
 - b. Twelve hours are required as a research collateral and include the following courses:

EDPR 7521 Introduction to Educational Research	(3)
EDPR 7541 Statistical Methods Applied to Education	(3)
CSED 7996 Thesis	(6)
 - c. Twelve hours are required as a clinical internship component that includes nine hours for the ADA developmentally accredited dietetic internship and three hours of advanced clinical practice. The required courses include:

CSED 7452 Clinical Internship I	(3)
CSED 7462 Clinical Internship II	(3)
CSED 7472 Clinical Internship III	(3)
CSED 7482 Clinical Residency	(3)
 - d. The student entering the program, having completed an ADA accredited dietetic internship with proof of registration as a dietitian, may waive Clinical Nutrition Internship I, II, and III.
3. Successful completion of a written comprehensive exam.
4. Oral defense of thesis.

CONSUMER SCIENCE AND EDUCATION (CSED)

6101. Preschool Curriculum. (3). (HMEC 6101). Application of child development principles to program planning; infancy through four years of age.

6204. Furnishings Problems and Presentations. (3). (HMEC 6204). Problems in planning, coordinating and purchasing of home furnishings. **PREREQUISITE:** HMEC 2004, 4304 or CSED 2004, 4304.

6205. Behavioral Science Aspects of Clothing. (3). (HMEC 6205). Interdisciplinary study of clothing and appearance: concepts, methodologies and applications of behavioral science to clothing.

6300. Family Resource Management. (3). (HMEC 6300). Investigates values, goals, and human and material resources necessary for individuals and families to make informed management decisions throughout the life span.

6304. Trends in Housing and Home Furnishings. (3). (HMEC 6304). Major trends and influences on contemporary residential furnishings as these affect home furnishings merchandising. **PREREQUISITE:** HMEC 2104 OR CSED 2104.

6383. Materials and Methods in Secondary Home Economics. (3). (HMEC 6383). Methods in high school subjects with an emphasis in Consumer Science and Education instruction; graduate or transfer students seeking update or initial certification.

6393. Occupational Education in Home Economics. (3). (HMEC 6393). History, philosophy, and organization of Home Economics Occupational Education; special emphasis will be given to instructional strategies and evaluation through classroom and on-site participation.

6405. Textiles. (3). (HMEC 6405). Selection, use and care of textiles related to properties of fibers, yarn structures, fabric construction, and finishes. Morphology and chemistry of fibers, finishes, dyes, fabric maintenance, and procedure involved in fiber, yarn, and fabric identification.

6602. Community Nutrition. (3). (HMEC 6602). Nutritional problems and practices of various ethnic, age and socioeconomic groups; study of the community and agencies concerned with meeting these needs. **PREREQUISITE:** HMEC 2202 or CSED 2202 or permission of instructor.

†6702. Food Production Internship. (3). (HMEC 6702-001). Supervised field experience in an area of food production and service.

†6712. Clinical Nutrition Internship. (3). (HMEC 6712). Supervised field experience in clinical nutrition. PREREQUISITE: HMEC 4102 or CSED 4102.

†6722. Catering Internship. (3). (HMEC 6702-002). Supervised field experience in catering. PREREQUISITES: HMEC 3602, 4502 or CSED 3602, 4502.

†6900. Study Tour in Consumer Science and Education. (1-3). (HMEC 6900-000). On-the-scene knowledge about general Consumer Science and Education. PREREQUISITE: Permission of instructor. May be repeated. Only 6 hours applicable to degree.

6901. Study Tour in Child Development and Family Relations. (1-3). (HMEC 6900-001). On-the-scene knowledge about Child Development and Family Relations. PREREQUISITE: Permission of instructor. May be repeated. Only 6 hours applicable to degree.

6902. Study Tour in Foods and Nutrition. (1-3). (HMEC 6900-002). On-the-scene knowledge about Foods and Nutrition. PREREQUISITE: Permission of instructor. May be repeated. Only 6 hours applicable to degree.

6903. Study Tour in Family Economics and Consumer Education. (1-3). (HMEC 6900-003). On-the-scene knowledge about Family Economics and Consumer Education. PREREQUISITE: Permission of instructor. May be repeated. Only 6 hours applicable to degree.

6904. Study Tour in Housing and Home Furnishings. (1-3). (HMEC 7904). On-the-scene knowledge about Housing and Home Furnishings. PREREQUISITE: Permission of instructor. May be repeated. Only 6 hours applicable to degree.

6905. Study Tour in Clothing and Textiles. (1-3). (HMEC 6900-005). On-the-scene knowledge about Clothing and Textiles. PREREQUISITE: Permission of instructor. May be repeated. Only 6 hours applicable to degree.

6906. Study Tour in Fashion Merchandising. (1-3). (HMEC 6900-006). On-the-scene knowledge about Fashion Merchandising. PREREQUISITE: Permission of instructor. May be repeated. Only 6 hours applicable to degree.

7101. Master's Seminar in Consumer Science and Education. (1-3). (HMEC 7101). Seminar designed to offer continuing personal/professional development. To be taken early in the master's program during two consecutive semesters for 1 and 2 credits respectively.

7202. Current Issues in Foods and Nutrition. (3). (HMEC 7202). Review and analysis of current research, trends and issues in area of foods and nutrition. PREREQUISITES: HMEC 4402, 4802, or CSED 4402, 4802, and CHEM 4512.

7205. Nutrition Assessment. (3). Didactic and laboratory methods in the selection, performance, and interpretation of nutrition assessment techniques. PREREQUISITES: CSED 4402; CHEM 4512.

7212. Applied Nutrition for Health. (3). (HMEC 7212). Basic principles of nutrition and their applications to health and fitness. Not applicable to nutrition concentration.

7222. Advanced Therapeutic Nutrition. (3). (HMEC 7222). Physiological and biochemical bases of nutrition-related diseases and principles of treatment and prevention. PREREQUISITES: HMEC 4402 or CSED 4402, BIOL 1632, CHEM 4512.

7300. Independent Study in Consumer Science and Education. (1-3). (HMEC 7300). Opportunity for creative, directed, independent study in a specific area of Consumer Science and Education. Available to provide breadth and/or depth to the student's program of study. May be repeated. Only 6 hours applicable to degree. PREREQUISITE: Consent of instructor.

†7312. Internship in Child Care Services. (3). (HMEC 7311). Materials, methods, and coordination of work experiences for occupational Home Economics including supervised on-the-job experience in a selected occupational area (Child Care Services) for the teacher. PREREQUISITES: HMEC 2102, 6101, 7393 or CSED 2102, 6101, 7393, or their equivalents.

†7313. Internship in Food Service. (3). (HMEC 7312). Materials, methods, and coordinating of work experiences for occupational Home Economics including supervised on-the-job experience in a selected occupational area (Food Service) for the teacher. PREREQUISITES: HMEC 2202, 3302, 4202, 6502, 7393 OR CSED 2202, 3302, 4202, 6502, 7393, or their equivalents.

7393. Seminar in Vocational Family and Consumer Sciences. (1-3). (HMEC 7393). Analysis of the philosophy, curriculum, operation, and evaluation of vocational programs in family and consumer science with scope and direction based on Federal Vocational Legislation and State Department of Education: Rules and Regulations.

†7400. Internship in Consumer Science and Education. (3-9). (HMEC 7302). Supervised field experience in a selected area of Consumer Science and Education. PREREQUISITE: Permission of Department Chair.

†7401. Internship in Child and Family Studies. (3-9). (HMEC 7302). Supervised field experience. PREREQUISITE: Permission of Department Chair.

†7402. Internship in Nutrition Education and Food Systems. (3-9). (HMEC 7302). Supervised field experience. PREREQUISITE: Permission of Department Chair.

†7403. Internship in Family and Consumer Sciences. (3-9). (HMEC 7302). Supervised field experience. PREREQUISITE: Permission of Department Chair.

†7404. Internship in Housing/Home Furnishings. (3-9). (HMEC 7302). Supervised field experience. PREREQUISITE: Permission of Department Chair.

†7405. Internship in the Fashion Industry. (3-9). (HMEC 7302). Supervised field experience. PREREQUISITE: Permission of Department Chair.

†7406. Internship in Marketing Education. (3-9). (HMEC 7302). Supervised field experience. PREREQUISITE: Permission of Department Chair.

†7407. Internship in Nutrition. (3-9). (HMEC 7302). Supervised field experience. PREREQUISITE: Permission of Department Chair.

7412. Cellular Nutrition I. (3). (HMEC 7412). Generation, storage, and use of energy; metabolism of carbohydrate, protein, fat, and other macro and micronutrients; control of metabolic processes in normal anabolic and catabolic conditions. PREREQUISITE: Student must meet ADA Didactic Program in Dietetics requirements or permission of instructor.

7415. Clothing Behavior Patterns. (3). (HMEC 7405). Application of basic concepts from cultural anthropology, sociology, and psychology to the study of the behavioral science aspects of clothing through surveys of pertinent research literature, selected references and periodicals, and related field experiences.

7420-29. Workshops in Consumer Science and Education. (3). (HMEC 7420-29). Designed to respond to needs and interests of students in Consumer Science and Education. Specific titles of workshops vary.

7422. Cellular Nutrition II. (3). (HMEC 7422). Cellular and subcellular metabolism of the micro-nutrients; digestion, absorption, transport, utilization, and excretion of vitamins and minerals; interrelationships of micro- and macronutrients; recent advances in micronutrient research. PREREQUISITE: Student must meet the ADA Didactic Program in Dietetics requirements or permission of instructor.

7432. Nutrition and the Life Cycle I: Maternal, Infant, and Child Nutrition. (3). (HMEC 7432). Food, nutrition, and human behavior in the development of individuals from conception through childhood; economic, social, and environmental bases for intervention in the development of food habits and modification of diet in the treatment and prevention of disease and disability; nutritional assessment methods appropriate for this age span. PREREQUISITE: Student must meet ADA Didactic Program in Dietetics requirements or permission of instructor. COREQUISITE: HMEC 7452 or CSED 7452.

7433. Nutrition and the Life Cycle II: Adolescent, Adult, and Geriatric Nutrition. (3). (HMEC 7433). Food, nutrition, and behavior in the life span from adolescence throughout life; economic, social, and environmental bases for intervention in the development of food habits and modification of diet in the treatment and prevention of disease and disability; nutritional assessment methods appropriate for this age span. PREREQUISITE: Student must meet ADA Didactic Program in Dietetics requirements or permission of instructor. COREQUISITE: HMEC 7462 or CSED 7462.

7442. Clinical Nutrition Administration. (3). (HMEC 7442). Models and approaches used in the organization and management of health and nutrition clinical and community based programs; entrepreneurial

al nutrition/dietetics program development; leadership in organizational technology; clinical nutrition research methods; and grant writing. PREREQUISITE: Student must meet ADA Didactic Program in Dietetics requirements. COREQUISITE: HMEC 7472 or CSED 7472.

452. Clinical Internship I. (3). (HMEC 7452). Directed clinical practice in health care settings serving infants, children, and women during pregnancy and lactation. Emphasis on nutrition in normal growth and development, women's health during reproduction, lactation, and social support in achieving health and human development. PREREQUISITE: Student must meet ADA Didactic Program in Dietetics requirements. COREQUISITE: HMEC 7432 or CSED 7432.

462. Clinical Internship II. (3). (HMEC 7462). Directed clinical practice in health care settings serving adolescents, adults, and elderly persons. Emphasis on nutrition in wellness and maintenance of health in aging as well as prevention and treatment of disease and disability and social support in achieving health and human development. PREREQUISITE: Student must meet ADA Didactic Program in Dietetics requirements. COREQUISITE: HMEC 7492 or CSED 7492.

472. Clinical Internship III. (3). (HMEC 7472). Directed clinical experience in the administration of nutrition services including food service systems, clinical and community nutrition service delivery systems, clinical research programs, and health promotion programs. Includes four-week culminating experience requirement for dietetic internship program. PREREQUISITE: Student must meet ADA Didactic Program in Dietetics requirements. COREQUISITES: CSED 7442, 7522.

482. Clinical Residency. (3). (HMEC 7482). Individualized clinical experience designed at advanced level to enhance self-direction in learning and to develop advanced competence in various areas of foods and nutrition practice and/or management with an emphasis on services delivery, teaching, and research. PREREQUISITE: Student must have completed an ADA accredited dietetic internship.

500-7509. Special Topics in Consumer Science and Education. (1-3). (HMEC 7500-7509). Current topics in areas of Consumer Science and Education. May be repeated with change in content. See *Schedule of Classes* for topic.

522. Advanced Food Systems Management. (3). (HMEC 7520). Detailed overview of current food service management systems with particular emphasis on hospital system internships. PREREQUISITE: HMEC 6502 or CSED 6502.

600. Entrepreneurship in Consumer Science and Education. (3). Principles involved in initiating, managing, and accepting risks associated with entrepreneurial pursuits as applied to consumer science and education disciplines, e.g. private practice, consulting, technical assistance, and educational services; and operation of shops, day care centers, food service establishments, and boutiques.

700. Professional Practices in Consumer Science and Education. (3). Adoption and implementation of current professional strategies with focus on the development of written, verbal, and visual skills.

800. Consumer Issues: Family Systems Management. (3). Utilizes a systems approach in the analysis of consumer issues from a managerial perspective with emphasis on major family situations across the life cycle.

996. Thesis. (1-6). (HMEC 7996).

†Grades of S, U, or IP will be given.

MARKETING EDUCATION

The department of Consumer Science and Education offers graduate study leading to a Master of Science degree. Marketing education courses with MKED prefixes are available to provide the 7000 level required collateral.

MARKETING EDUCATION (MKED)

10. Cooperative Occupational Education. (3). (MKED 6610). Study occupational education programs which use work experience coordinated with related in-school instruction to provide clear preparation vocational education. (Spring semester only).

11. Principles and Philosophy of Vocational Education. (3). (MKED 6611). History, philosophy, principles and objectives of vocational education,

curriculum problems, contribution of vocational education to general education; trends and research problems in vocational education.

7620. Administration and Supervision of Vocational Education. (3). For vocational teacher or public school administrator desiring to accept responsibility for supervising vocational education programs at local area or state levels. Includes program design; curriculum construction; classroom supervision; physical layout, administration of supplies, textbooks and equipment; state and federal legislation; accounting and reporting.

7630. Instructional Development in Marketing, Merchandising, and Management. (3). Developing instructional materials and techniques for high school and post-secondary marketing education programs. (Fall semester only.) PREREQUISITE: MKED 7010 and 7641.

7641. Techniques of Coordination in Marketing Education. (3). (MKED 6641). Selecting training agencies; developing job analyses; selecting and briefing the training supervisor; selecting and working with advisory committees; utilizing other community resources. PREREQUISITE: MKED 7010.

7642. Development and Supervision of Vocational Student Organizations. (3). (MKED 6680). Aims and objectives of vocational student organizations and their value in occupational preparation; their development, curricular integration operation and evaluation.

7650. Research Problems in Marketing Education. (1-3). Individual investigation and reports of research problems. PREREQUISITE: Permission of instructor.

7690-99. Workshops in Marketing Education. (1-9). (MKED 6690-99). Group study of selected phases of the marketing education program, designed to assist both in-service and prospective marketing teacher-coordinators in improving the teaching-learning processes contained in three phases of program operation: classroom instruction, on-the-job training and student organization advisement. See *Schedule of Classes* for topic. May be repeated; however, credit applicable to a degree is limited.

7700. Marketing Education Study Tour. (1-3). (MKED 6700). An opportunity to gain on-the-scene knowledge about specific areas of instruction within marketing education. May be repeated; however, the student should consult with major adviser to determine the maximum credit which may be applied to a degree program. PREREQUISITE: Permission of instructor.

†7993. Occupational Experience Practicum. (1-3). Practical experience in occupational specialty area for certification and/or occupational updating; employment in occupational specialty area; comprehensive research report. PREREQUISITE: Permission of instructor.

†Grades of S, U, or IP will be given.

Counseling, Educational Psychology and Research

RONNIE PRIEST, Ph.D., *Chair*
and *Coordinator of Graduate Studies*
(901) 678-2841

E-mail: sgsutton@memphis.edu
www.coe.memphis.edu/~coe/CEPR/cepr.html

MEMBERS

- LINDA BOL, *Assistant Professor*
Ph.D. (1991), University of California-Berkeley [2000]
ROBERT CRAWFORD, *Professor*
Ed.D. (1973), University of Kentucky [2000]
CORRINA A. ETHINGTON, *Professor*
Ph.D. (1985), Virginia Tech [2000]
BOBBY G. GREER, *Professor*
Ph.D. (1965), University of Texas at Austin [2000]
DOUGLAS J. HACKER, *Assistant Professor*
Ph.D. (1994), University of Washington [2001]
DIANNE HORGAN, *Professor*
Ph.D. (1975), University of Michigan [2000]

SHARON G. HORNE, *Assistant Professor*

Ph.D. (1998), The University of Georgia [2004]

RICHARD K. JAMES, *Professor*

Ph.D. (1974), Indiana State University [2000]

JEANMARIE KEIM, *Assistant Professor*

Ph.D. (1992), Arizona State University [2003]

SUZANNE H. LEASE, *Associate Professor*

Ph.D. (1989), Southern Illinois University-Carbondale [2000]

OWEN RICHARD LIGHTSEY, JR., *Associate Professor*

Ph.D. (1992), University of Maryland [2001]

NANCY NISHIMURA, *Assistant Professor*

Ed.D. (1991), University of Alabama [2001]

LESLIE PHILLIPSEN, *Assistant Professor*

Ph.D. (1994), University of California at Los Angeles [2000]

RONNIE PRIEST, *Associate Professor*

Ph.D. (1990), University of Alabama [2004]

ERNEST A. RAKOW, *Professor*

Ph.D. (1974), University of Chicago [2002]

STEVEN M. ROSS, *Professor*

Ph.D. (1974), Pennsylvania State University [2000]

THOMAS V. SAYGER, *Associate Professor*

Ph.D. (1987), Indiana State University [2000]

JEAN A. STEITZ, *Professor*

Ph.D. (1978), University of Wisconsin-Madison [2002]

DAVID R. STRAUSS, *Assistant Professor*

Ph.D. (1995), University of Wisconsin-Madison [2003]

KAREN D. WEDDLE-WEST, *Associate Professor*

Ph.D. (1982), University of Tennessee [2002]

ASSOCIATE MEMBERS

SHERRI L. HORNER, *Assistant Professor*

Ph.D. (1998), City University of New York [2004]

TANIA ISRAEL, *Assistant Professor*

Ph.D. (1998), Arizona State University [2004]

N. DEWAINE RICE, *Associate Professor*

Ed.D. (1980), Memphis State University [2000]

ADJUNCT MEMBERS

ERSKINE P. ANSBROOKS

Ph.D. (1993), The University of Tennessee at Knoxville [2001]

ROSIE P. BINGHAM

Ph.D. (1977), Ohio State University [2001]

PAMELA A. COGDAL

Ph.D. (1989), Southern Illinois University [1999]

EMILY C. DAVIS

Ed.D. (1994), University of Memphis [2001]

DAVID M. FAVARA

Ed.D. (1978), Mississippi State University [2001]

MARSHAL J. GRANEY

Ph.D. (1971), University of Minnesota, Minneapolis [1999]

CATHERINE M. McCULLAR

Ed.D. (1991), Memphis State University [1999]

LAURA E. OGLE MURPHY

Ed.D. (1985), Memphis State University [1999]

WILLIAM D. MURPHY

Ph.D. (1974), Ohio University [1999]

HARVEY BARRET NIELL

M.D. (1969), The University of Tennessee, Memphis [2001]

KENNETH G. POLIZZI

Ph.D. (1996), University of Memphis [2000]

- I. The Department of Counseling, Educational Psychology and Research offers graduate degree programs in three program areas: M.S. and Ed.D. degrees in Counseling and Personnel Services, M.S. and Ph.D. degrees in Educational Psychology and Research, and a Ph.D. degree in Counseling Psychology. Admission to each of these programs is handled separately. Each has its own admission criteria, and application must be made for a particular program before an applicant is considered for that program. Any person admitted to one of these programs who desires to transfer to another program within the department must make formal application to that program and will be evaluated competitively against the same criteria and on the same time schedule as all other applicants for that program.

The departmental objective is to prepare advanced educational leaders to be both sophisticated practitioners and researchers. Programs in Counseling

and Personnel Service and Counseling Psychology have a strong scientist practitioner base. Programs in Educational Psychology and Research have a strong research emphasis. The graduate degrees within the department will qualify students as university and college teachers, counselors, psychologists, program evaluators, and researchers in educational and counseling environments, as well as provide them with the skills necessary to fill a variety of roles in other settings in which knowledge of human development, learning and cognition, research and evaluation methods is essential.

- II. All graduate students within the department will demonstrate generalized competency in core areas of psychological inquiry. Generalized competency may be demonstrated either by passing examinations or completing designated coursework in three of the four general domains:

1. Research methods and data analysis
2. Measurement and evaluation
3. Human development
4. Learning and cognition

III. M.S. Degree Programs

Major: Counseling and Personnel Services

Concentrations:

- Community Agency Counseling
- Rehabilitation Counseling
- School Counseling
- Student Personnel Services

The Master's degree programs in Counseling and Personnel Services prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research on visible ethnic populations and gender differences), counseling and helping skills (individual and group counseling, and assessment), research and evaluation tools, and professional identity, role and function. The concentrations in Community Agency Counseling, School Counseling and Student Personnel Services are accredited by the Council of Accreditation of Counseling and Related Educational Programs (CACREP). The Rehabilitation Counseling concentration is accredited by the Council of Rehabilitation Counseling (CORE).

A. Program Prerequisites

Students need 6 semester hours of Course work at the upper division undergraduate or the graduate level in psychological or cultural foundations.

B. Program Admission

Applicants must apply to the Graduate School and to the program. The Master of Science degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide official undergraduate and/or graduate transcripts, all academic work completed, submit a Graduate Record Exam (GRE) score, complete a program admission application including appropriate goals essay, provide three letters of academic and/or professional reference, undergo an interview with the faculty, and submit a writing sample. Deadline for the completion of all admissions requirements is April 1 of the fall semester and November 1 for the spring semester. The program selection committee selects students after all application materials and the personal interview are completed. Program admissions forms are available in the department office.

C. Program Requirements

1. All programs are a minimum of 48 semester hours.
2. Demonstrated competency in at least 3 of the 4 department core areas: human development, research methods, assessment, and learning and cognition.
3. M.S. program core (9 hours): COUN 7531, COUN 7551, EDPR 7521, EDPR 7523.
4. All students are to maintain good standing (3.0 or better grades) in required courses.
5. Concentration requirements:
 - a. Community Agency Counseling (39 hours): COUN 7411, 7541, 7571, 7630 and EDPR 7117; 9 semester hours forming a focal area within community counseling; practicum COUN 7631 (3 hours) and internship COUN 7632 (6 hours); 3 hour elective.
 - b. Rehabilitation Counseling (39 hours): COUN 7411, 7541, 7571, 7791, 7903, 7911, 7921; 6 hours of electives approved by advisor; practicum COUN 7941 (3 hours) and internship COUN 7942 (6 hours).
 - c. School Counseling (39 hours): COUN 7411, 7541, 7542, 7561, 7571, 7661 and EDPR 7117; 9 hours of supportive electives; practicum COUN 7662 or 7645 (3 hours) and internships COUN 7642 and 7646 (6 hours).
 - d. Student Personnel Services (39 hours): COUN 7411, 7541, 7561, 7571, 7622, 7623, and EDPR 7117; 9 hours of supportive electives; practicum COUN 7625 (3 hours) and internship COUN 7626 (6 hours).
6. All programs include clinical components, practica and internships and each student's effectiveness will be evaluated by faculty and supervisors. Prior to contact with clients in practicum and internship students are expected to evidence good judgment and appropriate emotional functioning. Final decisions regarding student effectiveness

will be predicated upon factors including course grades, demonstrated clinical competence, personality factors, and any relevant test scores.

7. Written comprehensive examination.

V. M.S. Degree Programs

Major: Educational Psychology and Research

Concentrations:

Educational Psychology
Educational Research

The Master's degree programs in Educational Psychology and Research prepare educational leaders for scholarly expertise with a knowledge base for critical thinking in human development across the life span, cognitive processes applied to education, educational research methods and statistics.

A. Program Admission

Applicants must submit a completed application packet, including application to the Graduate School, application to the program, official transcripts for undergraduate and graduate studies, official report of Graduate Record Examination (GRE) scores, a 300-500 word statement of goals and intended area of concentration, and three letters of recommendation. Applicants to the M.S. program are evaluated three times a year. All application information must be received by July 1 for fall semester admission, November 1 for spring semester admission, and April 1 for summer semester admission. The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE scores, personal goals statement, relevant employment history, and letters of recommendation. Admission forms are available in the departmental office.

B. Program Requirements

1. All programs are a minimum of 36 semester hours.
2. M.S. program core (12 credits):
 - (a) Research (6 credits): EDPR 7521 or 7523, and 7511 or 7541
 - (b) Learning & Cognition (3 credits): EDPR 7121
 - (c) Human Development (3 credits): at least one from EDPR 7111, 7112, 7117
3. Concentration in Educational Psychology or Educational Research (15 credits): courses to be taken within the area of concentration will be planned with the major adviser.
4. Electives to be taken outside of the major (6 credits)
5. Research project/thesis (3 credits-EDPR 7000): Each M.S. student is expected to complete an independent research project or thesis as a culminating experience.
6. M.S. Comprehensive Examination. Upon completion of coursework each M.S. degree student will complete a written comprehensive examination covering the domains of research methods and data analysis, measurement and evaluation, human development, and learning and cognition. The exam will be administered by the student's advisory committee and coordinated by the student's adviser. An oral examination may follow if it is deemed necessary by the advisory committee.

Ed.D. Degree Programs

Major: Counseling and Personnel Services

The Ed.D. program in Counseling and Personnel Services is designed to prepare advanced professional practitioners in counseling, student personnel services, and counselor education with particular program emphases on multicultural and urban settings. Entry into the program presumes a master's degree in counseling and personnel services wherein one has acquired knowledge and skills in human development, helping relationships, group counseling, lifestyle and career development, assessment techniques, research and evaluation, and clinical experiences in applied settings. The Ed.D. is designed for individuals seeking advanced preparation as educational leaders in the role of professional counselor and researcher and who may seek additional credentials in counselor supervision and counselor education. The Ed.D. is not appropriate for individuals seeking preparation or licensure as a psychologist.

A. Program Prerequisites

A master's degree in counseling that meets CACREP standards for core knowledge and skills is a program prerequisite. Students with a master's degree in counseling that does not contain all core areas can be considered for admission, but will be required to complete additional coursework prior to enrolling in doctoral level courses.

All applicants need at least six semester hours of graduate work in cultural, historical, or psychological foundations of education.

B. Program Admission

Applicants must apply to the Graduate School and to the program. The Doctor of Education degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide official undergraduate and graduate transcripts of all academic work completed, submit a Graduate Record Exam (GRE) score, complete a program admission application including appropriate goals essay, provide three letters of academic and/or professional reference, undergo an interview with the faculty, and submit a writing sample. The program selections committee selects students after all application materials and the personal interview are completed. Deadline for the completion of all admissions requirements is April 1 for the fall semester and November 1 for the spring semester. Program admissions forms are available in the department office.

C. Program Requirements

1. Thirty (30) semester hours in the major, including COUN 8501, 8510, 8511, 8530, 8750, 8841, and 8885.
2. Nine (9) semester hours in research (EDPR 8541, 8542, and a research elective).
3. 12 semester hours in a specialty (a specialty area such as counselor education, consultation, program evaluation, etc.).
4. 9 semester hours of dissertation.
5. All students must earn at least a 3.0 in all required courses.

VI. Ph.D. Degree Programs

Major: Educational Psychology and Research

Concentrations:

Educational Psychology
Educational Research

The Ph.D. degree program in Educational Psychology and Research is designed to prepare advanced educational leaders for university teaching, applied research, or other professional roles in the areas of human development (infant, child and adolescent development; adult development and aging), learning (motivation and cognitive processes applied to education), educational research methods and statistics, measurement and program evaluation.

Since the purpose of doctoral-level training is to prepare students to conduct research in a specialized area, individuals with no interest in research should not apply to this major.

Applicants to the Ph.D. program are evaluated three times a year. Completed application packets must be received by July 1 for fall semester admission, November 1 for spring semester admission, and April 1 for summer admission. The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE scores, personal goals statement, relevant employment history, and letters of recommendation. The number of students admitted to the Ph.D. program will depend on availability of adequate faculty supervision. Admission forms are available in the departmental office. The completed application must include:

1. Letters of recommendation from at least three persons familiar with the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's capabilities for graduate study and for future performance and scholarship.
2. A statement of 500-1000 words indicating the intended area of concentration, the applicant's present interests and career goals, research and applied interests, and prior research and applied experience.
3. A willingness to be interviewed by members of the Educational Psychology & Research faculty, should that be required.

B. Program Requirements

1. Credit Hours. A minimum of 54 hours of graduate credit beyond the master's degree.
2. All students upon admission into the doctoral program need to demonstrate competencies in the four departmental core domains (research methods and data analysis; measurement and evaluation; human development; and learning and cognition) as prerequisites for further coursework. Students may demonstrate their competency by (a) having earned at least a 3.0 in each of the entry level courses (EDPR 7523, 7511 or 7551, 7117, 7121) during their master's program, or (b) by passing proficiency exams. Doctoral students with low proficiency in any of these core domains must complete the appropriate entry level course before more advanced coursework. These entry level courses will not count toward the minimum of 54 hours required.
3. Core (24 credits):
 - (a) Research (18 credits): EDPR 8541, 8542, 8561, 8543 or 8549 or an approved equivalent, and at least 6 credits of supervised research EDPR 8081. All doctoral degree students are expected to be active in collaborative research with members of the faculty each semester they are enrolled. This includes the research based residency that must result in a paper submitted to a refereed journal or a refereed professional conference.
 - (b) Learning & Cognition (3 credits): at least one from EDPR 8149, 8150, 8151.
 - (c) Human Development (3 credits): at least one from EDPR 8111, 8112, 8113, 8114, 8131, 8161.
4. Concentration in Educational Psychology or Educational Research (15 credits): courses to be taken within the area of concentration will be planned with the major adviser.
5. Electives to be taken outside of the major (3 credits).
6. Comprehensive Examination. Upon completion of coursework each doctoral student will complete a written comprehensive examination covering the domains of research methods and data analysis, measurement and evaluation, human development, and learning and cognition. The exam will place emphasis on the student's area of concentration, will be administered by the student's advisory committee and will be coordinated by the student's adviser. An oral examination will follow the written examination.
7. Dissertation and Final Defense (12 credits-EDPR 9000). A dissertation acceptable to the faculty is a requirement for all doctoral students. The dissertation must embody the results of an extended research effort that is an original contribution to the existing body of research within that area of concentration. The dissertation should reflect the

candidate's ability to conduct independent research and interpret in a logical manner the facts and phenomena revealed by the research. Upon completion of the dissertation, each student will orally defend the research undertaken.

VII. Ph.D. Degree Programs

Major: Counseling Psychology

The Counseling Psychology program is fully accredited by the American Psychological Association and prepares psychologists who embody a scientific approach to understanding and working with both specific and general problems in human behavior. The program is interdisciplinary; is organized around the scientist-practitioner model of critical thinking; and is implemented through didactic and experiential activities that emphasize research, development, evaluation, and learning as bases for prevention and remediation that assist persons of all ages and all life styles with improving and optimizing their well-being. The program has sufficient flexibility for students to pursue their own interests.

A. Program Prerequisites (or their equivalent) at the masters level: Group Processes, Assessment/Evaluation, Career Counseling, Counseling Theories, Practicum, Research/Data Analysis.

B. Program Admission

A limited number of applicants are admitted once each year only for admission in the Fall semester; applicants for Spring admission are not considered. All application credentials must be received by January 15 for an applicant to be considered. Applicants to the doctoral program in Counseling Psychology must hold a Master's degree (or equivalent) in counseling, psychology, or a related area and often have had substantial work experience. Admission prerequisites (or equivalents) are: Group Processes, Theories of Counseling, Career Counseling, Assessment Techniques, Practicum, and Statistics/Research.

Admission decisions are made on the basis of GRE scores, graduate GPA, personal statement, letters of recommendation, clinical and research experience, and interviews. Competitive GRE scores are required. Minimum GRE scores of 1000 (V+Q) are recommended. The program mean GRE (V+Q) is 1135 and the program mean for graduate GPA is 3.79. A completed application packet will include the following: departmental application, GRE scores, graduate transcripts, four letters of recommendation from persons familiar with the applicant's academic record and potential for graduate study in counseling psychology, and a personal goals statement.

NOTE: Both ETS and the GRE Board have advised that a combined GRE score should not be used as an absolute cutoff for admissions decisions, but rather should be used as part of an overall evaluation of applicants. A recent GRE Board statement reads as follows: "A cutoff score based only on GRE scores should never be used as the sole criterion for denial of admission." The Counseling Psychology program subscribes to this principle.

C. Program Requirements

1. 15 semester hours in Substantive Psychology including 3 semester hours in each of Biological Bases of Behavior, Social Bases of Behavior, Cognitive-Affective Bases of Behavior, Individual Behavior, History and Systems of Psychology
2. 6 semester hours in Counseling Psychology Professional Issues, CPSY 8101 & 8201
3. 6 semester hours in Psychometric Theory and Methods, PSYC 8803 & 8804
4. 12 semester hours in Research Methods/Data Analysis, EDPR 8541, 8542, 8543; CPSY 8203
5. 15 semester hours in Counseling, CPSY 8102, 8202; COUN 8721, 8750, 8841
6. Six (6) semester hours in counseling psychology practicum, CPSY 8200. Minimum of 400 clock hours is required.
7. 15 semester hours of Electives in a Concentration
8. Residency Project and Comprehensive Examinations. Upon completion of the core counseling psychology coursework and a research based residency project, each doctoral student will complete a written comprehensive examination covering the core counseling psychology domains. An oral examination will follow the written examination.
9. 12 semesters hours in Dissertation, CPSY 9000
10. 9 semester hours in Predoctoral Internship, CPSY 8800. A full-time one-year internship in Counseling Psychology in an agency approved by the Director of Training is required. The dissertation prospectus must be approved prior to beginning an internship.

D. Enrollment

The counseling psychology program is a full-time program of study. Candidates for the Ph.D. degree in counseling psychology are expected to carry a minimum of 9 hours credit per semester.

E. Professional Competency

Candidates for the Ph.D. in counseling psychology are specializing in a profession. The Ph.D. degree represents more than the accumulation of the specified number of semester hours credit. The student has responsibility to the public and to the psychology profession to ensure that satisfactory levels of professional and research competencies are attained.

COUNSELING AND PERSONNEL SERVICES (COUN)

Courses numbered 7000 and above are available only to fully admitted department graduate students and students seeking post-master's professional development.

6150. Interpersonal Skills for Educators. (3). (EDSV 6150). Development of human relation skills to enhance educator's ability to interact effectively with people in educational environments.

6611. Introduction to Counseling. (3). Exploration of history, principles and administration of counseling services in community agencies, schools, business and industry. Survey of applicable counseling services, skills and techniques.

6781. Strategies for Crisis Intervention. (3). Survey of processes of crisis intervention. Overview of crisis-induced behavior, crisis situations, and crisis intervention approaches.

6783. Alcohol and Drug Abuse Services. (3). Survey of human services for treating alcoholic and substance persons. Overview of treatment strategies and philosophies.

7006-15. Special Topics in Counseling and Personnel Services. (1-3) Study of current topics in the area of counseling and personnel services. May be repeated with a change in content.

7411. Foundations of Counseling. (3). Introduction to professional roles, responsibilities, and identity of counselor; counseling ethics credentials, and sociocultural context of counseling.

7531. Group Counseling Processes. (3). Organization and maintenance of effective groups; group participation, projects and readings to aid students in delineating their roles in various group settings. PREREQUISITE OR COREQUISITE: COUN 7411.

7541. Theories of Counseling and Personality. (3). (7581-8581). Person-centered, behavioral, cognitive-behavioral, reality, rational-emotive, Gestalt, psychoanalytic, and other appropriate theories. Emphasis on theoretical concepts, principles, and dynamics as applied in practice. PREREQUISITE OR COREQUISITE: COUN 7411

7542. Theories of Child Counseling and Consulting. (3). (7582-8582) Person-centered, behavioral, and related theories. Experiences include exercises in counseling, consulting, and coordinating with focus on the elementary school.

7551. Assessment Techniques. (3). (7651-8651). The basic principles, test and non-test appraisal instruments, and skills of diagnosis. Selection, use, and interpretation of such instruments appropriate for individual appraisal. PREREQUISITE: EDPR 7511, 7521, or 7523.

7561. Career Counseling. (3). (7661-8661). Process of career development and planning, career and lifestyle counseling, planning, and development. PREREQUISITE OR COREQUISITE: COUN 7411.

7562. Career Development for Children. (3). (7662-8662). The effective use of human resources in the world of work. Selection and use of instructional materials and field experiences related to career development. Exploration of knowledge and skills needed to support career awareness and exploration in grades K-9.

7571-8571. Clinical Techniques. (3). (7690-8690). Implementation and practice of counseling theories; modeling, practice, and critique of counseling skills. PREREQUISITE: COUN 7411; 7541 or 7542.

7622-8622. College Student Counseling and Development. (3). Study of traditional and non-traditional college students. Emphasis on identification of development needs and appropriate counseling approaches.

7623-8623. College Environments. (3). Person-environment interaction theories, campus ecology, impact of college environments on diverse student populations, and higher education environment assessment techniques. PREREQUISITE: COUN 7622.

7624-8624. Seminar in Student Services in Higher Education. (3). (7673-8673). Designed for students in the field of student services in higher education; explores the varied functions and key issues of the student services division.

†7625. Practicum in Student Services in Higher Education. (3). (7690-8695). Supervised student personnel experiences in such post-secondary educational settings as admissions, financial aids, student activities, residence life, academic advising, career placement and planning.

minority student affairs, and adult student services. 150 hours. PREREQUISITE: Program approval.

7626. Internship in Student Services in Higher Education. (4-6). (7948-8948). Supervised student affairs experience in an appropriate student personnel setting in a post-secondary institution. The student will be involved in service activities for a minimum of 300 (or half-time for 4 hours) or 600 (or full-time for 6 hours). May be repeated by half-time students for a maximum of 8 semester hours. PREREQUISITE: Program approval.

7630-8630. Counseling in Community Settings. (3). Overview of skills and knowledge unique to mental health counselors in community settings; mental health service delivery, community assessment, counseling and assessment for mental disorders, and preventative mental health concepts. PREREQUISITE: COUN 7411, 7541.

7631. Practicum in Community/Mental Health Counseling. (3). (7892-8892). Supervised counseling experience in a community/mental health setting with varied clientele. The student will be involved in individual and group counseling activities appropriate to the setting. 150 hours. PREREQUISITE: Program approval.

7632. Internship in Community/Mental Health Counseling. (4-6). (7698-8698). Supervised counseling experience in an appropriate community/mental setting. The student will be involved in agency services for a minimum of 300 (or half-time, for 4 hours) or 600 (or full-time, for 6 hours). May be repeated by half-time students for a maximum of 8 semester hours. PREREQUISITE: Program approval.

7640-8640. Principles of School Counseling. (3). Organization and administration of components of counseling services in schools, role and function of the school counselor in K-12 system. PREREQUISITE: COUN 7411.

7641. Practicum in Elementary School Counseling. (3). (7692-8692). Supervised counseling with elementary age children. Group discussions and individual interviews provide the student opportunities to interact with elementary children in a variety of settings. Practice in appropriate techniques in interaction with elementary children. 150 hours. PREREQUISITE: Program approval.

7642. Internship in Elementary School Counseling. (3-6). (7697). Supervised counseling experience in working with elementary school-aged children in education-based activities. The student will be involved in services for a minimum of 300 (or half-time for 4 hours) or 600 (or full-time for 6 hours). May be repeated by half-time students for a maximum of 8 semester hours. PREREQUISITE: Program approval.

7645. Practicum in Secondary School Counseling. (3). (7691-8691). Supervised counseling with adolescents. Assistance with individuals and groups and practice in providing assistance in educational, occupational, and personal decision making. 150 hours. PREREQUISITE: Program approval.

7646. Internship in Secondary School Counseling. (3-6). (7696-8696). Supervised counseling experience in working with adolescents in education-based activities. The student will be involved in services for a minimum of 300 (or half-time for 4 hours) or 600 (or full-time for 6 hours). May be repeated by half-time students for a maximum of 8 semester hours. PREREQUISITE: Program approval.

10-8710. Alcohol/Drug Counseling. (3). Process of counseling alcoholic and drug dependent persons. Modalities of treatment, philosophy of treatment and referral. PREREQUISITE: COUN 7541.

11-8711. Therapeutic Techniques with Substance Abusers. (3). (7684). Conventional methods utilized in treatment of substance abuse, individual and group counseling techniques, residential and outpatient programs. PREREQUISITE: COUN 7710 or permission of instructor.

20-8720. Systems Development for Family Therapy. (3). (7780). Systems theory applied to families as a framework for family therapy; analysis of family systems at different stages of the family life cycle; theory of family therapy, research, and professional ethical issues. PREREQUISITE: COUN 7541 or permission of instructor.

21-8721. Theories and Techniques of Family Therapy. (3). (8781). Major approaches to family therapy: structural, Bowenian, strategic, behavioral, communications, experiential, object relations; techniques and assumptions, traditional and current practices. PREREQUISITE: COUN 7720 or permission of instructor.

7722-8722. Marital Counseling and Therapy. (3). (8782). Marital counseling and problem situations; phases of therapy, ethical dilemmas, research methodology in couple/family dysfunction. PREREQUISITE: COUN 7720 or permission of instructor.

7723-8723. Human Sexuality in Counseling and Psychotherapy. (3). Attitudes, values, beliefs, and theoretical concerns related to human sexuality; counseling strategies for individuals and couples regarding sex-related issues.

†7724. Practicum in Marital and Family Therapy. (3-6). (7894-8894). Supervised marital and family counseling experience in an appropriate setting. The student will be involved in services in the setting. 150 hours. PREREQUISITE: Program approval.

†7725. Internship in Marital and Family Counseling. (3-6). (7944-8944). Supervised marital and family counseling experience in an appropriate setting. The student will be involved in all setting services for a minimum of 300 (or half-time for 4 hours) or 600 (or full-time for 6 hours). May be repeated by half-time students for a maximum of 8 semester hours. PREREQUISITE: Program approval.

7730-8730. Crisis Intervention Counseling. (3). Study and practice in understanding crisis theory and crisis-induced dysfunctional behavior, recognizing crisis situations, and the application of crisis intervention methods and strategies to help people in emotional crises return to a state of cognitive, affective, and behavioral equilibrium and functional coping.

7740-8740. Counseling Sexually Victimized Children and Their Families. (3). This course is designed to familiarize students with issues related to counseling sexually victimized children and their families. PREREQUISITE: Major in Counseling or permission of instructor.

7750-8750. Multicultural Counseling. (3). (8784). Theory and research on individual and group multicultural counseling with particular attention to ethnic and racial sectors of society in the U.S. PREREQUISITE: Major in Counseling or permission of instructor and COUN 7411, 7541.

7751-8751. Gender Issues in Counseling. (3). (8783). Current issues related to counseling women and men including developmental theory, awareness of sex role socialization and biases, and appropriate approaches to counseling women and men. PREREQUISITE: Major in Counseling or permission of instructor.

7752-8752. Counseling Gay, Lesbian, and Bisexual Clients. (3). Gay, lesbian, and bisexual issues in counseling and psychotherapy; affirmative psychotherapy techniques and gay, lesbian, and bisexual issues, including identity formation, homophobic and heterosexism, relationships, parent and family dynamics, ethnic minorities, religion and morality, gender roles, AIDS/HIV, and suicidal ideation. PREREQUISITE: Major in counseling or permission of instructor.

7760-8760. Gerontological Counseling. (3). (7882-8882). Counseling and developmental theories applied to the aging. Experience in the use of appropriate individual and group counseling techniques with the aged with emphasis on crisis situations relating to retirement, relocation, dying, death, survivorship. PREREQUISITE: Major in Counseling or permission of instructor.

7761-8761. Midlife and Pre-retirement Counseling. (3). (7883-8883). Processes relating to career and lifestyle review and preparing for retirement. Attitudes, finances, leisure planning, career change or part-time employment. Emphasis on planning and executing pre-retirement programs in business, industry, and social organizations or community agencies. PREREQUISITE: Major in Counseling or permission of instructor.

7770-8770. Consultation Theories and Practices. (3). (7787-8787). Exploration of counselor role as consultant in various settings; development of appropriate skills to interact with client and in applying concepts to practice.

7780-8780. Seminar in Counseling. (1-3). (7672-8672). Devoted to current concerns and methodology in counseling. May be repeated for a maximum of nine semester hours credit. PREREQUISITE: Major in counseling or permission of instructor.

7790-8790. Special Problems in Counseling. (1-3). (7993). Individual investigation and report in the area of counseling under the direction of a faculty member. May be repeated for a maximum of nine hours. PREREQUISITE: Major in Counseling or permission of instructor.

7841-8841. Advanced Counseling Theories and Techniques. (3). (CPSY 7784-8784). Critical analysis of selected theories and techniques of counseling. Emphasis is upon a variety of major theories and systems. Provides a thorough theoretical base for developing a consistent approach to professional counseling. PREREQUISITE: COUN 7541 or 7542 or permission of instructor.

7885-8885. Legal and Ethical Issues in Counseling. (3). (CPSY 7785-8785). Examination of existing and needed legislation affecting counseling and psychology, review of critical court cases; ethical standards of professional counseling and psychological organizations; survey of responsibilities and liabilities. PREREQUISITE: Advanced program standing or permission of instructor.

7901. Principles and Techniques of Rehabilitation Counseling. (3). Overview of the broad field of rehabilitation including the philosophical, social, psychological and legal basis of rehabilitation, professional practice and the counselor's role and function in the rehabilitation process.

7903-8903. Psycho-Social Aspects of Rehabilitation. (3). Theories and research in the area of the social psychological adjustment of disability, including related multicultural and urban factors.

7905-8905. Case Management. (3). Introduction to case management and procedures used in counseling and other human service settings; development of a conceptual understanding of case management, and ability to apply this knowledge to different types of populations and different types of treatment settings.

7911. Medical Aspects of Rehabilitation. (3). Orientation to the medical profession, its specialties and relationship to rehabilitation; a familiarity with basic medical and clinical terminology, a survey of body systems, their basic functions, malfunctions; and the more common diagnostic and treatment procedures.

7921. Vocational Development and Occupational Information Service. (3). Collection, evaluation and use of occupational, educational and related information in rehabilitation. Familiarity with the development of job descriptions and vocational surveys. Study of labor market trends and theories of occupational choice.

†7941. Practicum in Rehabilitation Counseling. (3). Supervised counseling experiences with persons with disabilities. Application of appropriate theories, principles and practices to personal counseling.

†7942. Internship in Rehabilitation Counseling. (3-6). Supervised field experiences in cooperation with the state rehabilitation agency and other human service agencies and facilities.

†7996. Thesis. (1-6). Prospectus must be approved by the faculty committee directing the research study. Application for writing thesis must be filed with the Director of Graduate Studies.

†8000. Specialist Culminating Experience. (1-6). Thesis, internship, field study, or special project designed under the direction of student's committee. Serves as capstone experience in the Education Specialist Program.

†8091. Teaching in Counseling for Graduate Assistants. (1-3). Overview and practical demonstrations of the art of teaching in counseling and counseling psychology. Restricted to graduate assistants. May be repeated.

†8092. Research Skills in Counseling for Graduate Assistants. (1-3). Research design, analysis, and methodology in counseling and counseling psychology. Restricted to graduate assistants. May be repeated.

†8093. Administrative Training for Graduate Assistants. (1-3). Overview and practical demonstrations of administrative skills in counseling, counseling psychology, rehabilitation counseling, or educational psychology and research. Restricted to graduate assistants. May be repeated.

8501. Doctoral Seminar in Counseling. (1-3). Professional seminar designed for the beginning doctoral student in counseling focussing on the development of professional identity as a leader in counseling; critical philosophical issues; research; new directions in theory and techniques; issues in counselor education and practice. Can be repeated for maximum of three hours.

8510. Counselor Supervision. (3). (CPSY 7786-8786). Critical analysis of theories of counselor supervision, techniques associated with theories, and assessment of those supervision models. Survey of research on counseling supervision issues. PREREQUISITE: Doctoral standing and Program approval.

†8511. Practicum in Counseling and Personnel Services. (3). Supervised experience in appropriate settings. The student will be involved in varied supervision activities as needed. 150 hours. PREREQUISITE: Program approval.

†8530. Doctoral Internship in Counseling and Personnel Services. (3-12). (7699/8699). Supervised experience in counseling and personnel services; complements course study with on-site professional experience focused on programmatic, career, and individual student goals. PREREQUISITE: Program approval.

8831. Advanced Group Processes for Counselors. (3). (CPSY 773-8731). Advanced study of group processes as applied to counseling and student services. Activities, functions, and dynamics of group will be studied with actual experience and group work included. PREREQUISITE: COUN 7531 and advanced standing in Counseling or permission of instructor.

†9000. Doctoral Dissertation. (1-9). Credit may be earned over period of several semesters. The dissertation may be an organized scientific contribution or a comprehensive analysis of theory and practice in a specific area.

†Grades of S, U, or IP will be given.

COUNSELING PSYCHOLOGY (CPSY)

7700-8700. Diagnosis and Counseling Interventions for Mental Disorders. (3). This course covers the assessment and diagnosis of mental disorders utilizing the DSM-IV classification system and the common counseling approaches for each of the major mental disorders. Knowledge covered includes current understandings of the etiology, prevention, and treatment of each mental disorder; differential diagnosis using the DSM-IV manual; counseling approaches and case management; and psychopharmacology. PREREQUISITE: Practicum.

8008. Directed Readings in Counseling Psychology. (1-3). Individually directed reading with written report required. May be repeated for maximum of nine hours. PREREQUISITE: Permission of instructor.

†8092. Research Skills in Counseling Psychology for Graduate Assistants. (1-3). Research design, analysis, and methodology in counseling psychology. Restricted to graduate assistants. May be repeated.

8101. Foundations of Counseling Psychology. (3). (7684-8684). Designed to orient students and initiate their identification with the profession of Counseling Psychology. Topics include history and future of Counseling Psychology; current issues in the field; an introduction to research, legal/ethical and professional standards. PREREQUISITE: Enrolled in CPSY program.

8102. Seminar in Group Counseling and Psychotherapy. (3). (879-8799). Theoretical-philosophical and research base of group counseling and psychotherapy; supervised application. PREREQUISITE: Doctoral student.

†8200. Counseling Psychology Practicum. (3-6). (8694). Critical analysis of actual counseling interviews; various methods employed for recording and observing counseling sessions such as audio and videotapes and one-way vision screens. PREREQUISITE: Enrolled in CPSY program. May be repeated for maximum of 12 semester hours.

8201. Professional Issues in Counseling Psychology. (3). Focus is professional identity, Counseling Psychology research, and legal/ethical issues. Professional issues, applications, and reading related diversity and the urban environment will be emphasized. PREREQUISITE: Enrolled in CPSY program.

8202. Vocational Psychology. (3). (COUN 8769). Analysis of career development theory and research as applied to practice of career counseling; variables affecting career development in diverse populations. PREREQUISITE: COUN 7561 or equivalent.

8203. Seminar in Counseling and Personnel Services Research. (1-3). (7683-8683). Designed to give the advanced graduate student in counseling and personnel services the opportunity to explore present research and research methodology and to begin to carry out research. PREREQUISITE: Fifteen semester hours of credit in counseling with consent of the instructor.

8501. Counseling Psychology Research. (3). (7790-8790). Supervised practice in developing, designing, conducting, writing, and reporting on a variety of investigative formats in counseling research. May

peated for a maximum of 12 semester hours. PREREQUISITE: Enrolled in CPSY program or consent of the instructor.

600. Counseling Psychology Seminar. (1-3). Devoted to current concerns and methodology in Counseling Psychology. PREREQUISITE: Doctoral student in Counseling, Counseling Psychology or consent of the instructor. May be repeated for a maximum of nine semester hours.

8800. Predoctoral Internship in Counseling Psychology. (3-6). (8890). Supervised internship in setting accredited by American Psychological Association, e.g., college counseling center, hospital or medical setting, or mental health clinic. PREREQUISITE: Completion of all coursework, comprehensive examinations, and approval of dissertation topic. May be repeated for maximum of 12 semester hours.

9000. Doctoral Dissertation. (1-12). Credit may be earned over a period of several semesters. The dissertation may be an organized scientific contribution or a comprehensive analysis of theory and practice in a specific area.

Grades of S, U, or IP will be given.

EDUCATIONAL PSYCHOLOGY AND RESEARCH (EDPR)

000. Thesis/Research Project (1-6). (EDFD 7000). Thesis or research project that is presented or published, designed under direction of student's committee, and completed while completing M.S. degree; capstone experience for Master's degree program. May be repeated for a maximum of 6 credit hours.

001-06-8001-8006. Special Topics in Educational Psychology and Research. (1-3). (EDFD 7006-7015-8006-8015). Current topics in educational psychology and research. May be repeated with a change in content.

008-8008. Directed Readings. (1-3). (EDFD 7008). Individually directed reading; written report required, may be repeated for a maximum of 9 credits. PREREQUISITE: Permission of instructor.

7009-8009. Practicum. (3-6). (EDPS 7109). Supervised experience in application of educational psychology and research principles and procedures for training activities in educational, industrial, or community settings. May be repeated for a maximum of 6 hours. PREREQUISITE: Permission of instructor and approval of major adviser.

881-8081. Supervised Research. (1-6). (EDFD 7081). Collaborative research with faculty within the major to include planning, design, management, analysis, and reporting of research. May be repeated for maximum of 12 hours. PREREQUISITE: Minimum of 12 hours in major and permission of instructor

8091. Teaching in Educational Psychology and Research for Graduate Assistants. (1-3). Overview and practical demonstrations of the art of teaching in educational psychology and research. Restricted to graduate assistants. May be repeated. PREREQUISITE: EDPR 7521 or 7523 or permission of instructor.

8092. Research Skills in Educational Psychology for Graduate Assistants. (1-3). Research design, analysis, and methodology in educational psychology and research. Restricted to graduate assistants. May be repeated. PREREQUISITE: EDPR 7521 or 7523 or permission of instructor.

9000. Dissertation. (1-12). (EDFD 9000). Independent research for doctoral degree. Credit may be earned over a period of several semesters.

Grades of S, U, or IP will be given.

EDUCATIONAL PSYCHOLOGY (EDPR)

711. Early Childhood Development for the Beginning Teacher. (3). Philosophy, theory, research, and pedagogy relating to physical, cognitive, social and emotional development of children from birth to eight years of age. PREREQUISITES: Admission to MAT program.

79-8109. Infant Development. (3). (EDPS 7110-8110). Infancy and childhood from developmental research issues perspective; empirical studies and contemporary issues relating to factors influencing infant development.

7110-8110. Early Childhood Development. (3). Advanced study of methodology, variables, and findings from empirical research relating to early childhood development via contemporary developmental research literature.

7111-8111. Child Psychology Applied to Education. (3). (EDPS 7111-8111). Major theories of child psychology and their implications for educational practices with the preschool and elementary school child.

7112-8112. Adolescent Psychology Applied to Education. (3). (EDPS 7112-8112). Advanced study of theories and research on the physical, psychological, social, cognitive, and cultural aspects of adolescent development; implications for education, treatment, secondary school personnel, and others who live and work with adolescents.

7113-8113. Midlife and Adult Development. (3). (EDPS 7113-8113). Cognitive, emotional, and psychosocial theories and research on middle age and adult development.

7114-8114. Psychology of Aging. (3). (EDPS 7114-8114). Cognitive and psychosocial developmental theories of aging and implications for life-span education.

7115. Child Development for Beginning Teachers. (3). (EDPS 7115). Theories and research on the physical, psychological, social, cognitive, and cultural aspects of early childhood and child development with emphasis on implications for preschool and elementary classroom teacher. Open only to students admitted to licensure programs.

7116. Adolescent Development for Beginning Teachers. (3). (EDPS 7116). Theories and research on physical, psychological, social, cognitive, and cultural aspects of adolescent development with emphasis on implications for the secondary schools and secondary teachers. Open only to students admitted to licensure programs.

7117-8117. Life-Span Human Development. (3). Theories and research on the physical, psychological/emotional, social, cognitive, and cultural aspects of human development across the life span.

7121-8121. Learning and Cognition Applied to Education. (3). (EDPS 7121-8121). Major theories of learning and cognition; emphasis on current research and implications and applications for practitioners.

7131-8131. Culturally Diverse Students: Implications for Education. (3). (EDPS 7131-8131). Cultural differences among American student populations; emphasis on family structure, socialization of children, and cultural influences on student behavior.

7132-8132. Personality Variables in Classroom Teaching. (3). (EDPS 7132-8132). Role of teacher and student personality variables as they influence the teaching/learning process.

7149-8149. Seminar in Cognitive Processes Applied to Education. (3). (EDPS 7149-8149). Information processing, computer simulation of intelligence, critical thinking, memory, problem solving of normal and atypical learners with applications made for classroom instruction. PREREQUISITE: EDPR 7121.

7150-8150. Motivation. (3). (EDPS 7150-8150). Theoretical and research viewpoints on motivation from cognitive perspective; applications to educational and industrial setting. PREREQUISITE: EDPR 7121 or 7149 or permission of instructor.

7151-8151. Individual Differences in Learning. (3). (EDPS 7151-8151). Theoretical foundations of instructional models designed to adapt learning to individuals. Topics include programmed instruction, computer-based instruction, competency-based (PSI) models, token economy systems, peer tutoring strategies, and contemporary theoretical models pertaining to behavior modification, aptitude-treatment interactions, and adaptive instruction.

7161-8161. Moral and Ethical Development. (3). (EDPS 7161-8161). Current theory and research on moral and ethical reasoning and development across the life span and educational implications.

7165-8165. Social Development in Children. (3). Current theory and research on children's social development. Emphasis on relationships with parents, teachers, siblings, and peers from infancy through adolescence.

8171. Seminar in Human Development. (3). (EDPS 8171). Research issues in human development; specifically focused on adolescence, midlife, aging, and implications across age groups. PREREQUISITE: EDPR 7111, 7112 or 7113 or 7114 or permission of instructor.

EDUCATIONAL RESEARCH (EDPR)

6530. Microcomputers in Education: Theoretical and Technical Foundations. (3). (EDRS 6530). History, development, and status of microcomputers in education and introduction to technical knowledge and skills needed to operate microcomputers for specialized educational applications. Course is designed to provide prerequisite knowledge for more advanced computer-related training in different educational specialty areas.

7511-8511. Measurement and Evaluation. (3). (EDRS 7511). Test construction, test statistics, and interpretations and applications of standardized test results.

7512-8512. Psychometric Theory and Educational Application. (3). (EDRS 7512-8512). Psychometric principles and applications to tests, rating scales, questionnaires and other standardized instruments used in educational research; problems associated with evaluation of items and instruments in terms of reliability and validity. PREREQUISITE: EDPR 7511 and 7541 or permission of instructor.

7513-8513. Development of Assessment Instruments. (3). (EDRS 7513-8513). Desired characteristics of tests and their development; designing content and item specifications, item construction, forms development, and reporting considerations. PREREQUISITE: EDPR 7511 or permission of instructor.

7514-8514. Administration of Assessment Programs. (3). (EDRS 7514-8514). Overview of large scale, district or state-wide testing programs; planning assessment program, contracting, selections, and training of subordinate administrators, test scoring software and procedures, security arrangements, and reporting of test results. PREREQUISITE: EDPR 7511 or permission of instructor.

7521. Introduction to Educational Research. (3). (EDRS 7521). Introduction to major concepts and processes underlying educational research. Focus on knowledge necessary for critically appraising published research and preparing students as research consumers.

7522-8522. Advanced Educational Research. (3). (EDRS 7522-8522). Philosophical aspects of the scientific method in education; functions of paradigms, theories and models in inquiry; theory development and validation; major types of analytical, qualitative and descriptive inquiry appropriate to the study of educational phenomena. PREREQUISITE: EDPR 7521 or 7523, and 7541, or permission of instructor.

7523-8523. Applied Educational Research. (3). (EDRS 7523-8523). Conducting and interpreting research concerned with learning and teaching. Statistical and research methods, interpretation of literature, report writing, and development of proposal for research project.

7531-8531. Computer as a Research Tool. (3). (EDRS 7531-8531). Computer applications to research processes in education and the behavioral sciences; capabilities and limitations of computers in analysis of educational data; experience in the utilization of various (statistical) library programs. PREREQUISITE: EDPR 7541/8541; or permission of the instructor.

7541-8541. Statistical Methods Applied to Education I. (3). (EDRS 7541-8541). Utilization and interpretation of statistical methods applied to education. Topics include frequency distributions, central tendency, variability, correlation, linear regression, introduction to probability, normal distribution, interval estimation, hypothesis testing via t-test and chi-square and computer utilization in statistical analysis. PREREQUISITE: EDPR 7521 or 7523 or permission of instructor.

7542-8542. Statistical Methods Applied to Education II. (3). (EDRS 7542-8542). Includes one-way and two-way analysis of variance, a priori and post hoc tests of significance and an introduction to multiple linear regression. Emphasis is placed on student acquisition of practical intermediate univariate analytic and interpretative skills. PREREQUISITE: EDPR 7541 or permission of instructor.

7543-8543. Research Design and Analysis. (3). (EDRS 8543). Includes validity of research designs, complex analysis of variance, and analysis of covariance; emphasis is on practical advanced univariate and analytic and interpretative skills. PREREQUISITE: EDPR 7542 or permission of instructor.

7544-8544. Applications of Multiple Regression in Educational Research. (3). Path models; path analysis, hierarchical linear modeling

(HLM); applications of path analytic and HLM techniques in educational research: PREREQUISITE: EDPR 7/8542 or permission of instructor.

7547-8547. Sampling Designs and Survey Research Methods. (3). Examines sampling procedures, design/administration of sample surveys; strategies (simple-random, probability, non-probability, cluster, single and multi-stage), effect of strategy on sampling error confidentiality/anonymity issues, questionnaire design, interview procedures, item development, question format, preparation of survey data for statistical analysis. PREREQUISITE: EDPR 7/8542 or permission of instructor.

7551-8551. Introduction to Evaluation Systems. (3). (EDRS 7551-8551). Examines procedures and problems in utilization of evaluation and in identifying its purposes; treats the functions and methods of evaluation especially as affected by organizational behavior and political influences. Evaluation methodology includes but is not limited to design considerations, data utilization, and concepts and method of needs assessment. PREREQUISITE: EDPR 7521 or 7523 or permission of instructor.

7561-8561. Qualitative Methods in Education. (3). (EDRS 7561-8561). Issues, procedures, and problems of conducting qualitative research in educational settings. PREREQUISITE: EDPR 7521 or 7523 or permission of instructor.

7572-8572. Institutional Research in Education. (3). (EDRS 7572-8572). Techniques of institutional analysis in designing self-studies; evaluating the teaching and learning environment and institutional planning. PREREQUISITE: EDPR 7521 or 7523 or permission of instructor.

8519. Seminar in Educational Measurement. (3). (EDRS 8519). Systematic investigation of advanced topics in the field of educational measurement. A prior course in educational statistics is recommended.

†8529. Seminar in Research Applications for Educators. (3). (EDRS 8529). Systematic investigation of advanced educational research applications. PREREQUISITE: permission of instructor.

8549. Multivariate Methods in Education. (3). (EDRS 8549). Systematic investigation of current multivariate methods in the field of educational statistics. PREREQUISITE: EDPR 7542 or permission of instructor.

†Grades of S, U, or IP will be given

Human Movement Sciences and Education

RALPH C. WILCOX, Ph.D., *Chair*

MICHAEL H. HAMRICK, Ed.D.

Coordinator of Graduate Studies and Research
(901) 678-3472

E-Mail: mhamrick@memphis.edu
www.hmse.memphis.edu

MEMBERS

DAVID L. ANDREWS, *Assistant Professor*

Ph.D. (1993), University of Illinois at Urbana [2000]

DAVID J. ANSPAUGH, *Professor*

Ed.D. (1976), University of Tennessee [2000]

DARRELL CRASE, *Professor*

Ph.D. (1966), Ohio State University [2000]

ANDREW C. FRY, *Associate Professor*

Ph.D. (1993), Pennsylvania State University [2000]

MARY D. FRY, *Assistant Professor*

Ph.D. (1994), Purdue University [2002]

MICHAEL H. HAMRICK, *Professor*

Ed.D. (1973), University of Tennessee [2000]

MICHAEL G. HUFFMAN, *Associate Professor*

Ph.D. (1985), University of Utah [2004]

RICHARD L. IRWIN, *Associate Professor*

Ed.D. (1990), University of Northern Colorado [2000]

- RICHARD B. KREIDER, *Associate Professor*
Ph.D. (1987), University of Southern Mississippi [2000]
- YUHUA LI, *Assistant Professor*
Ph.D. (1994), Texas A & M University [2000]
- BOOSE OKWUMABUA, *Associate Professor*
Ph.D. (1985), University of New Mexico [2002]
- ROBERT PITTER, *Assistant Professor*
Ph.D. (1993), University of Alberta [2002]
- FRANK D. ROSATO, *Professor*
Ed.D. (1973), University of Tennessee [2000]
- LAWRENCE WEISS, *Professor*
Ed.D. (1979), University of Georgia [2000]
- RALPH C. WILCOX, *Professor*
Ph.D. (1982), University of Alberta [2000]

ASSOCIATE MEMBERS

- SHARON VAN OTEGHEN, *Professor*
P.E.D. (1973), Indiana University [2000]

ADJUNCT MEMBERS

- VILMA CINGIENE
Ph.D. (1993), Moscow State University-Lomonosov [2002]
- DAVID CLUTCH
Ph.D. (1996), The University of Memphis [2001]
- UDITH GRIFFIN
M.S. (1970), Boston University [2001]
- LINDA HALL
Ph.D. (1977), The Ohio State University [2001]
- JOHN EWING HUGHSON
Ph.D. (1994), University of New South Wales [2000]
- STEPHEN J. KINZEY
Ph.D. (1997), University of Toledo [2000]
- NANCY LOUGH
Ed.D. (1995) University of Northern Colorado [2002]
- BARBARA MCCLANAHAN
Ed.D. (1990), The University of Memphis [2001]
- MARY O'TOOLE
Ph.D. (1980), Temple University [2001]
- HYLLIS A. RICHEY
Ph.D. (1996), University of Mississippi [2000]
- VILLIAM A. SUTTON
Ed.D. (1983), Oklahoma State University [2000]
- PETER J. TITLEBAUM
Ed.D. (1993), Temple University [2000]

The Department of Human Movement Sciences and Education offers a Master of Science degree program in Human Movement Science. Concentrations are offered in Exercise and Sport Science, Health Promotion, and Sport and Leisure Commerce.

M.S. Degree Program

A. Program Prerequisites

1. Applicant must submit official transcript for undergraduate and graduate studies, official report of Graduate Record Examination (GRE) scores, and application to the Graduate School. Applicant seeking admission to the Sport and Leisure Commerce concentration may opt to take the Graduate Management Admissions Test (GMAT) in lieu of the GRE.
2. Applicant must submit Departmental Graduate Admission Application Form, two letters of recommendation, and a 300-500 word statement of goals and intended area of concentration directly to the department. (Contact the department's graduate coordinator for admission forms.) Due to the close mentoring of students by the graduate faculty, admission to the program is limited. To ensure maximal consideration for admission into the program, the following dates are provided: May 1 for summer and fall and November 1 for the spring semester. The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE/GMAT scores, personal goals statement, relevant employment history, and letters of recommendation.
3. Applicant must have graduated with a minimum baccalaureate GPA of 2.5.
4. Completion of an appropriate undergraduate major and a strong background in science-oriented courses such as anatomy and physiology, health sciences, exercise physiology, kinesiology, sport psychology, and motor learning for Exercise and Sport Science and Health Promotion concentrations; or a background in business management, economics, finance, marketing, public relations, commercial recreation, resort management, and tourism courses for the Sport and Leisure Commerce concentration.

5. Completion of undergraduate work deemed by the concentration committee as prerequisite to graduate courses.

B. Program Requirements

A minimum of 39 hours is required of all students.

1. Program Core (9 hours): EDPR 7523, EDPR 7541, and EXSS 7900, HPRO 7900, or SLC 7900.
2. Concentration requirements:
 - a. Exercise and Sport Science (18 hours): EDPR 7542, EXSS 7123, 7163, 7173, 7201, 7202.
 - b. Health Promotion (21 hours): HPRO 7182, 7702, 7712, 7722, 7800, HMSE 7183, and 7403. Students who are able to demonstrate recent and extensive clinical experience may substitute HPRO 7800 with a guided elective upon written approval of the adviser. This does not reduce the total number of credit hours required for graduation.
 - c. Sport and Leisure Commerce (15 hours): SLC 7321, 7331, 7420, 7503, SLC 7440.
3. Guided electives selected with approval of the adviser:
 - a. Exercise and Sport Science concentration (choose 6 hours): BIOL 6620, 6630, 6503, 6511, 6504, 6512, 7005, 7010, 7031, CSDE 7212, EDPR 7531, EXSS 6406, 6603, 6902-11, 7210/8210, 7220/8220, 7230, 7722/8722, 7902-11, 7152, 7800, HMSE 7183, 7403, PSYC 7208, 7210, 7211.
 - b. Health Promotion Concentration (choose 6 hours): CSDE 7212, ECON 7710, EXSS 7173, 7201, 7202, HIAD 7255, HPRO 6401, 6501, 6601, 6902-11, 7152, IDT 7073, SOCI 6541, 7851.
 - c. Sport and Leisure Commerce Concentration (choose 12 hours): Select a minimum of four courses from the following list including at least one course from each of categories A and B, plus two other courses. Category A: SLC 6102-11, 6902-11, 7152, 7341, 7351, 7361, 7371, 7600, 7603, 7653, 7800, 7902, SLC 7605. Category B: JOUR 6328, 6440, 6712, 7400, 7420, 7440, LEAD 7112, 7130, 7150, and 7180, MGMT 7030, 7170, 7220, and MKTG 7060, 7140, 7170, 7213, and 7510.
4. Culminating Experience (3 hours): HMSE 7996 (Thesis) or EXSS 7950 (Exercise and Sport Science concentration), HPRO 7950 (Health Promotion concentration), or SLC 7950 (Sport and Leisure Commerce Concentration).
5. Successful completion of an oral or written comprehensive examination.

C. Program Retention Policy

All M.S. degree students are regularly monitored for completion of any entry-level deficiencies by graduate faculty.

A department retention committee, comprised of selected graduate faculty, monitors the academic progress of all M.S. degree students. The committee determines whether or not the student is making sufficient progress and, in case of deficiencies, may recommend additional work or the dismissal of the student from the program. For any student recommended for dismissal, an appeals process is available.

HEALTH PROMOTION (HPRO)

6000. Lifetime Wellness I. (3). Concepts, applications and assessments for secondary teachers of lifetime wellness, emphasis on personal fitness, disease prevention and nutrition.

6001. Lifetime Wellness II. (3). Concepts, applications and assessments for secondary teachers of Lifetime Wellness. Emphasis on mental health, safety and first aid, sexuality and family life, and substance use/abuse.

6202-20. Workshops in Health. (1-3). (HLTH 6202-20). Selected phases of health promotion through group study; in-depth study of areas of interest and need for persons in health promotion and related fields.

6401. Death and Dying Education. (3). (HLTH 6203). Examination of dying and death phenomena via cognitive, affective, experiential, and cultural perspectives.

6501. Sexuality Education. (3). (HLTH 6204). Selected phases of human sexuality.

6601. Drug Education. (3). (HLTH 6205). Current issues concerning drug use and abuse including etiology, knowledge base, drug laws, and educational prevention approaches.

6602. Organization and Administration in Public Health. (3). (HLTH 6602). Basic functions, principles, and procedures of organization and administration as applied to health; emphasis on relationship and responsibilities of personnel in planning, promoting, improving, and evaluating the total health activities in family-centered health services. Not offered after August 2001.

6902-11. Special Topics in Health Promotion. (3). Current topics in health promotion. May be repeated with change in topic. See *Schedule of Classes* for topic.

7012. Evaluation and Utilization of Health Instructional Materials and Media. (3). (HLTH 7012). Analysis, evaluation, and application of health instruction materials and media.

7122. Current Readings in Health Promotion. (3). (HLTH 7122). Directed readings in health promotion; material selected to strengthen areas of study. May be repeated for maximum of nine credits.

†7142. Seminar in Health Promotion. (1-3). (HLTH 7142). Graduate Seminar in health promotion. May be repeated for a maximum of 12 credits.

7152. Special Problems in Health Promotion. (3). Independent study and/or research project on selected health problems or issues. PREREQUISITE: Permission of instructor.

7182. Health Promotion. (3). (FITW 7182). Development of health promotion programs in community and corporate settings, including assessment of program development, selection of personnel, administrative procedures, evaluation procedures, marketing techniques, and legal issues.

7702. Contemporary Health Issues. (3). (HLTH 7702). Extensive examination of timely and important issues in the health promotion area.

7712. Epidemiology. (3). (HLTH 7712). Introduction to selected diseases of special concern in public health practice with emphasis on epidemiologic models and methods. PREREQUISITE: Introductory statistics, HLTH 7802, EDRS or EDPR 7521, or permission of instructor.

7722. Health Intervention Theories and Applications. (3). (HLTH 7722). Examination of an array of health theories and their applications to relevant health problems and prevention-intervention programs. These theoretical frameworks will be critiqued in some depth.

†7800. Internship in Health Promotion. (3-6). Directed field experience focusing on development of knowledge, skills and techniques needed to function as health promotion specialist in public or private settings.

†7900. Problem Identification and Research Planning Seminar. (3-6). The methodology involved in planning, conducting, analyzing, and reporting research associated with health promotion. Prior to completion of the course, specific proposals must be approved by the designated committees for the following: research prospectus; informed consent form if human subjects are to be used in the investigation. PREREQUISITE: Completion of 18 credit hours in the program of study or permission of instructor.

7902-11. Special Topics in Health Promotion. (1-3). (HLTH 7092-11). Current topics in health promotion. May be repeated with a change in topic. See departmental listing in *Schedule of Classes* for topic.

†7950. Special Project in Health Promotion. (3). A functional study of a topic or problem in health promotion which significantly relates to the student's professional goals. PREREQUISITE: Permission of instructor.

EXERCISE AND SPORT SCIENCE (EXSS)

6403. Kinesiology. (3). (PHED 6403) Analysis of selected anatomic systems as related to purposeful movement of the human body. PREREQUISITES: BIOL 1731 and 1732 or permission of instructor.

6406. Exercise Testing and ECG Interpretation. (3). Introduction to methods of conducting ECG and cardiopulmonary exercise testing for asymptomatic and symptomatic populations; ACSM principles of exercise testing and methods of ECG interpretation.

6603. Advanced Methods of Strength Conditioning. (3). This elective course provides in-depth material on designing resistance exercise programs and the scientific basis for such programs. Also covers practical aspects such as exercise technique, safety issues, administration of strength and conditioning programs, and considerations for special populations. No other course covers these concepts, issues in such detail.

6902-11. Special Topics in Exercise and Sport Science. (3). Current topics in Exercise and Sport Science. May be repeated with change in topic. See *Schedule of Classes* for topic.

7123. Mechanical Analysis of Motor Skills. (3). (PHED 7123). Experiences that will enhance the understanding and practical application of the laws of mechanical physics to the fundamental techniques utilized in the performance of physical activities.

7133 Current Readings in Exercise and Sport Science. (3). (PHED 7133). Directed readings in area of exercise and sport science; materials selected to strengthen areas of study. May be repeated for a maximum of nine credit hours.

†7142. Seminar in Exercise and Sport Science. (1-3). (HLTH 7142). May be repeated for maximum of 12 credits.

7152. Special Problems in Exercise and Sport Science. (3). Independent study and/or research project on selected problems and issues in Exercise and Sport Science. PREREQUISITE: Permission of instructor.

7163. Advanced Motor Learning. (3). (PHED 7163). Investigation of research as it relates specifically to the acquisition of motor skills. Emphasis placed upon such variables affecting skill acquisition as: motivation, distribution, length and methods of practice; feedback mechanisms; and the retention and transfer of skills.

7173. Sport and Exercise Psychology. (3) Survey of literature related to psychological aspects of participation in sport, exercise, and physical activity settings.

7201. Physiology of Exercise: Musculoskeletal Aspects. (3). An analysis of both the physiological bases of musculoskeletal performance as well as specific adaptations that occur consequent to various regimens of exercise. Instruction in selected techniques for assessing musculoskeletal function and structure. PREREQUISITES: EDPR 7523, 7541.

7202. Physiology of Exercise: Metabolic/Cardiorespiratory Aspects. (3). An analysis of the acute and chronic metabolic/ cardiorespiratory bases of human performance and fitness under various internal and external environmental conditions. Instruction in selected techniques for assessing metabolic/ cardiorespiratory function and structure. PREREQUISITES: EDPR 7523, 7541.

7210-8210. Isokinetic Analysis of Muscle Function. (3). Theoretical bases for and applications of isokinetic (velocity-controlled) testing. Students will be guided in developing and evaluating new specialized protocols. Data analysis and interpretation of same will be stressed. PREREQUISITES: EDPR 7523, EDPR 7541, EXSS 7201.

7220-8220. Advanced Considerations of Skeletal Muscle Structure and Function. (3). Designed to follow EXSS 7201, this course covers gross, cellular, and molecular responses and adaptations of skeletal muscle of various types of human exercise. No other class provides this detailed information critical to the graduate student specializing in or interested in human skeletal muscle and exercise.

7542. Advanced Kinesiology. (3). (PHED 7542). Body motions as related to biomedical engineering, mathematical analysis of body motions using computer analysis, experimental techniques, and combinations. *Two lectures and three hours of laboratory per week.* PREREQUISITE: EXSS 6403 or permission of instructor.

†7800. Internship in Exercise and Sport Science. (3). Directed laboratory experience focusing on development of knowledge, skills and techniques needed to function as Exercise and Sport Science specialist in public or private settings.

†7900. Problem Identification and Research Planning Seminar. (3). Methodology involved in planning, conducting, analyzing, and reporting research associated with exercise and sport science. Prior to completion of the course, specific proposals must be approved by the designated committees for the following: research prospectus; informed consent form if human subjects are to be used in the investigation. PREREQUISITE: Completion of 18 credit hours in the program of study or permission of instructor.

7902-11 Special Topics in Exercise and Sport Science. (1-3). (PHED 7903-13). Current topics in exercise and sport science. May be repeated with a change in topic. See *Schedule of Classes* for topic.

†7950. Special Project in Exercise and Sport Science. (3). Functional study of a topic or problem in exercise and sport science which significantly relates to student's professional goals. PREREQUISITE: Permission of instructor.

HUMAN MOVEMENT SCIENCES AND EDUCATION (HMSE)

7183. Physical Fitness and Health. (3). Focuses on research pertaining to the relationship of physical exercise to the cardiovascular system, cardiovascular disease, longevity, weight control and relaxation. Physical work capacity, percent body fat, flexibility, and other factors are measured.

7403. Measurement and Evaluation in Human Movement Science. (3). (PHED 7403). Includes selection, application, and evaluation of certain tests appropriate to the Human Movement Sciences.

620. Teaching Skills in Human Movement Sciences and Education. (3). Overview and practical demonstrations of the art of teaching for graduate assistants; may be repeated. PREREQUISITE: permission of advisor.

622. Research Skills in Human Movement Sciences and Education. (3). Research design, practice, and methodology in human movement sciences and education; may be repeated. PREREQUISITE: permission of advisor.

7996. Thesis (1-6). (FITW/HLTH/PHED /RECR 7996). Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Director of Graduate Studies.

RECREATION (RECR)

201. Conceptual Issues in Therapeutic Recreation (3). Development of therapeutic recreation services in special settings, current practices, and analysis of future concerns for special populations.

202. Principles and Procedures of Therapeutic Recreation (3). Analysis of administrative practice and program development approaches; competency development for clinical and community based therapeutic recreation programs. PREREQUISITE: RECR 7201 or permission of instructor.

203. Therapeutic Recreation for the Aging. (3). Planning, scheduling, and implementation of therapeutic recreation programs and services for the aging population; emphasis on physical, psychological, intellectual, and sociological qualities affecting recreation programs and services. PREREQUISITE: 7201 or permission of instructor.

SPORT AND LEISURE COMMERCE (SLC)

102-11. Workshops in Sport and Leisure Commerce. (1-6). (RECR 705-15). Selected phases of sport and leisure commerce through group study, in-depth study in area of interest and need for leaders in sport and leisure commerce. May be repeated for credit when topic varies.

902-11. Special Topics in Sport and Leisure Commerce. (1-3). (RECR 905-15). Current topics in sport and leisure commerce. May be repeated with change in topic. See *Schedule of Classes* for topic.

7142. Seminar in Sport and Leisure Commerce. (1-3). (RECR 7145). May be repeated for a maximum of 12 credits.

152. Special Problems in Sport and Leisure Commerce. (1-3). (RECR 155). Independent study or research, or both, on selected sport and leisure commerce problems and issues. PREREQUISITE: Permission of instructor.

321. Theoretical Foundations of Sport and Leisure. (3). Influence of historical, philosophical, and social elements upon sport and leisure management policies, practices, and programs. PREREQUISITE: Fully admitted students in Sport and Leisure Commerce program.

31. Sport and Leisure as Promotional Culture. (3). Examination of popular sport practices and representations as both the products and producers of particular social, historical, economic, technological, and political arrangements; contribution to the formation of contextually specific class, race, gender, and nation based identities and experiences.

41. Commercial Recreation and Travel Tourism. (3). Survey of commercial leisure services with special emphasis placed on travel and tourism; sports and athletics, theaters, fitness centers, amusement and theme parks, aquatic areas, risk recreation, historical areas, and the travel and tourism industry. PREREQUISITE: Fully admitted in Sport and Leisure Commerce program.

51. Gender and Sexuality in Sport and Leisure. (3). (SLC 7201). Relationship between sport, leisure, and the dominant gender practices, experiences, and identities that structure everyday life within contemporary society. PREREQUISITE: SLC 7321, 7331, or permission of instructor.

51. Race and Ethnicity in Sport and Leisure. (3). Influence of sport and leisure on construction of differentiated racial and ethnic identities and experiences in contemporary American society. Focuses on ways sport and leisure provide contexts in which dominant understandings of race and ethnicity are introduced, naturalized, and reproduced. PREREQUISITE: SLC 7321, 7331, or permission of instructor.

7371. Sport and Leisure in the Global Marketplace (3). Cultural production, meaning, promotion, and consumption of sport and leisure across contrasting social, political, and economic systems; relative position of sport and leisure industries at cultural interstices in the emerging global village including the phenomena of cultural conflict, cultural resistance, and cultural imperialism. PREREQUISITE: SLC 7321; and 7331 or permission of instructor.

7420. Fundamentals of Sport and Leisure Commerce. (3). (SLC 7332). Basic market concepts with applications to sport and leisure organizations including urban sport and leisure market consumer behavior, strategic market planning, marketing mix component integration, and market information management. PREREQUISITE: MKTG 3010 and 4901 (or equivalents); or MKTG 7060; or permission of instructor.

7440. Sport and Leisure Promotions and Information Services. (3). A study of the marketing communication principles and practices as they relate to sport and leisure from a theoretical as well as practical perspective. Special emphasis is placed on building and maintaining effective media relations, advertising, sponsorship, licensing, public relations, sales, and aftermarketing tactics.

7503. Organizational Dynamics in Sport and Leisure Commerce. (3). Analysis of theoretical and practical issues relevant to management and administration of sport and leisure organizations; application of organizational analysis, managing change and external environments; understanding and managing power and organizational culture of sport and leisure commerce.

7600. Current Readings in Sport and Leisure. (3). (RECR 7135 or PHED 7133). Directed readings in the area of sport and leisure. Materials related to strengthen areas of study. May be repeated for a maximum of nine credits.

7603. Administration of Athletics. (3). Representative athletic administration procedure for colleges, public school systems, and municipal athletic leagues; fiscal procedures and business management.

†7605. Practicum in Sport and Leisure Commerce. (3). (RECR 7605). Field experiences providing an opportunity for practical application of classroom theory. A range between 140 and 420 clock hours in professional field work in selected sport and leisure settings according to student's particular area of emphasis.

7653. Managing Leisure and Sport Areas and Facilities. (3). (7100). Advanced management and operation of leisure and sport areas and facilities. Emphasis on comprehensive planning, design, maintenance, and inspection of areas and facilities.

7703. Sport and Leisure Programs for Special Populations. (3). (PHED 7402, SLC 7403). Examination of the special needs of people with disabilities regarding sport participation and management implications for recreation professionals.

7800. Computer Applications in Sport and Leisure Commerce. (3). (RECR 7800). Evolution, current application, and future potential of computers for sport and leisure commerce.

†7900. Problem Identification and Research Planning Seminar. (3). The methodology involved in planning, conducting, analyzing, and reporting research associated with sport and leisure. Prior to completion of the course, specific proposals must be approved by the designated committees for the following: research prospectus; informed consent form if human subjects are to be used in the investigation. PREREQUISITE: Completion of 18 credit hours in the program of study or permission of instructor.

7902-11. Special Topics in Sport and Leisure Commerce. (RECR 7905-15). (1-3). Current topics in sport and leisure commerce. May be repeated with change in topic. See *Schedule of Classes* for topic.

†7950. Special Project in Sport and Leisure Commerce. (3). A functional study of a topic or problem in sport and leisure which significantly relates to the student's professional goals. PREREQUISITE: Permission of instructor.

†Grades of S, U, or IP will be given.

Instruction and Curriculum Leadership

DENNIE L. SMITH, Ed.D., *Chair*

SHERYL A. MAXWELL, Ph.D.,
Coordinator of Graduate Studies
(901) 678-4061

E-mail: thweatt.gina@coe.memphis.edu
www.coe.memphis.edu/coe/ICL/icl.html

MEMBERS

- S. WALI ABDI, *Associate Professor*
Ed.D. (1988), Virginia Tech [2001]
- REBECCA S. ANDERSON, *Associate Professor*
Ph.D. (1993), Virginia Tech [2001]
- CAROLE L. BOND, *Professor*
Ph.D. (1979), Arizona State University [2002]
- THOMAS BUGGEY, *Associate Professor*
Ph.D. (1993), Pennsylvania State University [2001]
- LUCINDIA H. CHANCE, *Professor*
Ed.D. (1985), Memphis State University [2002]
- RONALD WILLIAM CLEMINSON, *Professor*
Ph.D. (1970), University of Iowa [2000]
- AMY P. DIETRICH, *Associate Professor*
Ed.D. (1979), Memphis State University [2000]
- CAROL PLATA ETHERIDGE, *Associate Professor*
Ed.D. (1984), Memphis State University [2004]
- PADDY C. FAVAZZA, *Associate Professor*
Ed.D. (1993), Vanderbilt University [2002]
- DUANE M. GIANNANGELO, *Professor*
Ph.D. (1972), University of Iowa [2000]
- BONNIE B. GREER, *Professor*
Ph.D. (1971), University of Oklahoma [2000]
- JOHN G. GREER, *Professor*
Ph.D. (1974), Pennsylvania State University [2000]
- JOHN M. JOHNSTON, *Professor*
Ph.D. (1978), Ohio State University [2002]
- MARSHALL JONES, *Assistant Professor*
Ph.D. (1993), University of Georgia [2004]
- JANIE KNIGHT, *Associate Professor*
Ph.D. (1983), University of Iowa [2005]
- DEBORAH L. LOWTHER, *Assistant Professor*
Ph.D. (1994), Arizona State University [2001]
- SHERYL A. MAXWELL, *Assistant Professor*
Ph.D. (1994), University of Virginia [2002]
- VIVIAN GUNN MORRIS, *Professor*
Ph.D. (1973), Vanderbilt University [2000]
- JANNA SIEGEL ROBERTSON, *Assistant Professor*
Ph.D. (1992), University of California at Los Angeles [2003]
- DENNIE LEE SMITH, *Professor*
Ed.D. (1969), Auburn University [2000]
- LANA JO SMITH, *Professor*
Ph.D. (1975), Southern Illinois University at Carbondale [2000]
- SATOMI I. TAYLOR, *Associate Professor*
Ph.D. (1992), Virginia Tech [2001]

ASSOCIATE MEMBERS

- KATHERINE ABRAHAM, *Assistant Professor*
Ph.D. (1979), University of Mississippi [2002]
- JOSEPH FARRIS CRABTREE, II, *Professor*
Ed.D. (1965), University of Virginia [2000]
- ARTHUR ERVIN GARNER, *Professor*
Ed.D. (1969), University of Houston [2001]
- DUANE INMAN, *Assistant Professor*
Ph.D. (1987), University of South Florida [2004]
- RAMONA MAHOOD, *Assistant Professor*
C.A.S. (1971), University of Illinois [2000]
- LESLIE MARLOW, *Assistant Professor*
Ed.D. (1986), University of Alabama [2004]
- JOHN W. SCHIFANI, *Professor*
Ed.D. (1971), University of Alabama [2000]
- JERRIE L. C. SCOTT, *Professor*
Ph.D. (1979), University of Michigan [2004]

DIANE SOPKO, *Assistant Professor*

Ph.D. (1998), Texas A&M [2004]

ANNE C. TROUTMAN, *Associate Professor*

Ph.D. (1977), Georgia State University [2000]

ADJUNCT MEMBERS

ELAINE ADAMS

Ed.D. (1991) Memphis State University [2001]

SHEILA C. BENTLEY

Ph.D. (1988), Arizona State University [2001]

GWENDOLYN A. BOYD

Ed.D. (1996), University of Memphis [2000]

MURPHYSTEEN CAMPBELL

M.Ed. (1983), Memphis State University [2000]

RHONDA SUE CAMPBELL

Ed.D. (1996), University of Memphis [2001]

JUDITH DOTSON

M.Ed. (1976), Memphis State University [2001]

MARY L. HALL

Ed.D. (1992), Memphis State University [2001]

KATHRYN HAWES

Ph.D. (1984), Kansas State University [2001]

MABEL HIMEL

Ed.D. (1994), University of Memphis [2000]

SUSAN KELLY

Ed.D. (1986), Memphis State University [2002]

MARILYN R. KEMP

Ed.D. (1989), Memphis State University [2000]

ELIZABETH MCBRIDE

Ed.D. (1994), University of Memphis [2001]

GARY R. MORRISON

Ed.D. (1977), Indiana University [2000]

LAURA MURPHY

Ed.D. (1985), Memphis State University [2000]

JAMES NEWMAN

Ed.D. (1994), University of Memphis [2000]

RICHARD POTTS

Ed.D. (1982), Memphis State University [2000]

JUNE RITCHIE

Ed.D. (1972), University of Mississippi [2001]

DEBRA SIMPSON

Ed.D. (1994), University of Memphis [2001]

PATRICIA TOARMINIA

Ed.D. (1990), Memphis State University [2000]

JOEL TURETSKY

Ed.D. (1990), Memphis State University [2000]

LINDA H. WRIGHT

Ed.D. (1993), Memphis State University [2000]

- I. The Department of Instruction and Curriculum Leadership offers graduate programs leading to the Master of Science, Master of Arts in Teaching, and Doctor of Education degrees. At the M.S. and Ed.D. levels concentrations are offered in early childhood, instructional design and technology, instruction and curriculum, reading, and special education. Students choosing the concentration of Instruction and Curriculum can elect in-depth studies in the areas of instruction and curriculum. At the M.A.T. level concentrations are offered in early childhood, elementary education, secondary education, and special education. Students choosing special education will choose one of three licensure areas: modified, comprehensive, or early childhood PreK-3. All programs designed for certification are approved by the National Council for the Accreditation of Teacher Education (NCATE). Graduate students in ICL can also take ID&T courses that focus on instructional computing applications in the P-12 classroom that will lead to a Certificate in Instructional Computing Applications.

II. M.S. Degree Program

A. Program Admission

Applicants must submit a completed application packet that includes: (1) application to the Graduate School, (2) application to the program in the Department of Instruction and Curriculum Leadership (ICL), (3) official transcripts of undergraduate and graduate studies from an accredited college, (4) official report of one of the following: Graduate Record Examination (GRE) score, or Miller Analogies Test (MAT) score, National Teacher's Education (NTE) General Knowledge score, (5) two letters of recommendation, preferably one from a college/university professor, (6) a demonstration of writing ability as shown in a 300-500 word statement of goals and area of interest.

B. Program Prerequisites

Applicants to the ICL graduate program are evaluated three times a year. All application information must be received by August 1 for fall semester.

admission, December 1 for spring semester admission, and May 1 for summer admission. Multiple criteria will be used when considering applicant admission, including, but not limited to undergraduate and graduate grade point average, scores of the submitted test, letters of recommendation, and personal goals statement. The admission committee may request a personal interview. Admission forms are available in the ICL graduate office.

C. Program Requirements

1. A minimum of 36 semester hours is required.
2. The major will consist of 18-21 semester hours in addition to ICL 7059 Models of Instruction and ICL 7992 Master's Project or ICL 7996 Thesis.
3. Electives - 3-6 semester hours. Courses taken depend on the undergraduate background, previous experiences of the student, and the nature of the major area of concentration. These courses must be approved as supporting the major area of study.
4. EDPR 7521 or 7523 and 3 semester hours in cultural, historical, or psychological foundations in education.

III. M.A.T. Degree and Licensure Program

M.A.T. degree and licensure programs are undergoing revisions. Please consult your adviser.

The M.A.T. degree includes coursework leading to initial licensure in the areas of early childhood preK-3, elementary, secondary, and special education. A self-paced program is available in all four licensure areas. Secondary education students may also choose the 14 month internship program which begins the first session of summer school. A program is also offered to individuals seeking licensure but not a graduate degree. Both programs prepare Early Childhood, Elementary, Secondary, or Special Education teachers.

A. Program Admission of M.A.T. and Licensure Program

Applicants must submit a completed application packet that includes: (1) application to the Graduate School, (2) application to the M.A.T. graduate program in the Department of Instruction and Curriculum Leadership (ICL), (3) official transcripts of undergraduate studies showing a Bachelor's Degree from an accredited college, official transcripts of any graduate studies, (4) submission of transcript evaluation of an appropriate general education curriculum, (5) submission of a transcript evaluation of sufficient coursework to permit licensure in a teaching field, (6) official report of one of the following: Graduate Record Examination (GRE) score, or Miller Analogies Test (MAT) score, or National Teacher's Education (NTE) General Knowledge score, (7) two letters of recommendation, preferably one from a college/university professor, (8) a demonstration of writing ability as shown in a 300-500 word statement of goals and area of interest.

B. Program Prerequisites

Applicants to the ICL graduate program are evaluated three times a year. All application information must be received by August 1 for fall semester admission, December 1 for spring semester admission, and May 1 for summer admission. Multiple criteria will be used when considering applicant admission, including, but not limited to undergraduate and graduate grade point average, scores of the submitted test, letters of recommendation, and personal goals statement. The admission committee may request a personal interview. Admission forms are available in the ICL graduate office.

In addition to the above, successful candidates must apply for admission to the Graduate Teacher Education Program (TEP) prior to or during the first semester of M.A.T. coursework.

Requirements for admission into TEP include 1) a grade point average of 2.5 (or 2.75 for the last 60 hours) at the undergraduate level, or 3.0 at the graduate level and, 2) successful completion of a personal interview. Some students may be asked to make an acceptable score on the Pre-Professional Skills Test (PPST) according to the criteria established by the Tennessee State Board of Education.

C. Program Requirements

1. For students seeking licensure and the M.A.T. degree, a minimum of 43 semester hours is required. Minimum hours may increase depending on licensure requirements fulfilled by undergraduate studies and specific area of licensure.

The students must satisfy requirements in General Education and must have met, or will have met upon completion of the program, the undergraduate requirements or their graduate equivalents in the field of study in which the student is seeking licensure.

Students seeking licensure through the Master of Arts in Teaching program must refer to undergraduate catalog requirements and procedures for admission to the Teacher Education Program and for student teaching and confer with the College of Education general adviser concerning requirements for licensure. Students must be admitted to the Teacher Education Program (TEP) before completing Level I courses and beginning to take Level II courses. TEP admission is different from Graduate School admission. Application for student teaching must be made one semester in advance.

2. Licensure in Tennessee requires acceptable scores on the NTE Specialty Examinations.

3. Students seeking Early Childhood licensure (PreK-3) and the M.A.T. degree must complete the following requirements.

- a. Early Childhood (PreK-3) Licensure Requirements: ECED 6510, 6520, 6530, 6540, 7102; ICL 7000, 7048 (2 hours), 7804 (9 hours), 7993 (1 hour); RDNG 7549; EDPR 6301; LEAD 6000; SPED 6900, 7101.

- b. Students are required to complete a minimum of 60 clock hours of structured field experience in preK-3 settings prior to student teaching. These field experiences will be incorporated into licensure requirement courses.

- c. M.A.T. Degree requirements in addition to (a) and (b) above: ICL 7059, 7001, EDPR 7521 or 7523; and either a thesis (ICL 7996-3 hours) or Master's project (ICL 7992-3 hours).

4. Students seeking Elementary Licensure (1-8) and the M.A.T. degree must complete the following requirements.

- a. Elementary Licensure (1-8) Requirements: ICL 7000, 7048 (2 hours), 7705, 7706, 7650, 7600, 7500, 7806 (9 hours), 7993 (1 hour); RDNG 7549, 7550, SPED 7000; EDPR 7115.

- b. Students are required to complete a minimum of 60 clock hours of field experience in elementary school settings prior to student teaching. These field experiences will be incorporated into licensure requirement courses.

- c. M.A.T. Degree requirements in addition to (a) and (b) above: ICL 7059, 7001, EDPR 7521 or 7523; and either a thesis (ICL 7996-3 hours) or Master's project (ICL 7992-3 hours).

5. Students seeking Secondary Licensure and the M.A.T. degree must complete the following requirements.

- a. Secondary Licensure Requirements: ICL 7000, 7048 (2 hours), 7705, 7706, 3 hours of appropriate methods course 7303, 7350, 7502, 7602 or 7652, 7807 or 7808 (9 hours), 7993 (1 hour); RDNG 7544, SPED 7000, LEAD 6000, EDPR 7116

(RDNG 7549 is a requirement for those seeking licensure in English. It is offered during the summer semester.)

- b. Students are required to complete a minimum of 60 clock hours of field experience in secondary school settings prior to student teaching. These field experiences will be incorporated into licensure requirement courses.

- c. M.A.T. Degree Requirements in addition to (a) and (b) above: ICL 7059, 7001, EDPR 7521 or 7523; and either a thesis (ICL 7996-3 hours) or Master's project (ICL 7992-3 hours).

- d. Students who wish to become licensed as a teacher of French, Spanish, German, and/or Russian must meet the following two requirements in addition to the requirements for licensure which other students must meet.

- 1) ACTFL Oral Proficiency Examination

- 2) Intensive language experience in the United States or abroad

6. Students seeking Special Education Licensure and the M.A.T. degree must complete the following requirements.

- a. Special Education core: EDPR 7115 or 6301, SPED 6900, 7000, 7221, 7241 (9), 7001 or ECED 7102 and ICL 7993.

- b. Licensure areas (choose one or more):

- (1) Modified (K-12): SPED 7211, 7041, RDNG 7549, ICL 7000.

- (2) Comprehensive (K-12): SPED 7601, 7611, 7621, 7042.

- (3) Early Childhood PreK-3: SPED 7101, 7121, 7621, 7141, ECED 6540.

- c. M.A.T. Degree Requirement: In addition to (a) and (b) above: ICL 7059, EDPR 7523, LEAD 6000 and either a thesis (ICL 7996-3 hours) or Master's project (ICL 7992-3 hours).

7. The curriculum for the Elementary Education Teacher Licensure and Master of Arts in Teaching Degree (1-8) program is in the process of revision. Please contact the M.A.T. office for current information.

IV. Ed.D. Degree Program

A. Program Admission

1. After application has been made to the Graduate School, students must apply for admission to the Department of Instruction and Curriculum Leadership. Each prospective student will complete a doctoral application file and schedule interviews with faculty members. The doctoral application file will minimally include: transcripts, GRE scores, letters of recommendation, and evidence of writing, such as a scholarly paper. The doctoral application file must be completed before an interview will be scheduled. Interviews must be completed prior to the University deadlines. Those deadlines are August 1 for the fall semester, December 1 for the spring semester, and May 1 for the summer semester.

2. Each student's file will be evaluated prior to full admission to the Department of Instruction and Curriculum Leadership. Only those files which are completed by the admission deadline will be considered.

3. Applicants whose native language is other than English must score at least 550 (or 210 computer-based) on the Test of English as a Foreign Language (TOEFL).

4. The above represent the minimal acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for doctoral studies.

B. Program Requirements

1. Students who have not completed at least six semester hours of graduate level work in cultural, historical, or psychological

foundations of education, must complete those hours during the first year of enrollment in the doctoral program. These prerequisites will not be counted toward the degree.

2. A minimum total of 54 hours post master's hours.
 3. The major will consist of 42-45, with 9-12 hours of dissertation credit (ICL 9000) and 3-6 hours of doctoral seminar (ICL 8995).
 4. The research requirement will consist of 9-12 hours. EDPR 7541 and 7542 are required. The remaining hours should consist of courses directed toward research and/or statistical techniques and procedures necessary for the discipline and the dissertation topic.
 5. Approved transfer credit or post-master's courses may be accepted for not more than 12 semester hours.
 6. Completion of the college and university residency requirements.
- Additional information pertaining to the major and concentration areas may be secured from the Chair or Graduate Coordinator of the Department of Instruction and Curriculum Leadership.

V. Certificate in Instructional Computing Applications.

For educators who want to integrate the use of computers in the classroom. The certificate requires the completion of 12 hours from a designated core of courses. The focus of these courses is to develop the technology competencies needed for the development, utilization, and integration of instructional computing technology in the classroom.

1. Admission

Students interested in receiving a Certificate in Instructional Computing Applications must be admitted to the graduate program in the Department of Instruction and Curriculum Leadership. The courses may be completed as part of a degree program with advisor's approval, or as additional course work.

2. Requirements

- a. Core courses: IDT 7061, IDT 7062, IDT 7063, IDT 7064.
- b. Students interested in developing computer-based instruction may substitute IDT 7073 for IDT 7062. Students interested in developing computer training workshops for teachers may substitute IDT 7076 for IDT 7064. Both substitutions must be approved by the advisor.

VI. Graduate Retention Policy.

It is the student's responsibility to obtain a copy of the retention policy from the departmental office.

INSTRUCTION AND CURRICULUM LEADERSHIP (ICL)

NOTE: Course numbers at the end of the title are former numbers. If the course has been taken under this former number, it may not be repeated unless so specified.

CURRICULUM (ICL)

6761. Aerospace Education in Schools. (3). (CIED 6761). Consideration of aerospace content and flight experiences. Emphasizes classroom applications. (Offered summer semester.)

6762. Advanced Aerospace Education in Schools. (3). Theory, principles, and practices related to the historical development of aerospace, with emphasis on both civilian and military uses of aerospace capabilities; appropriate utilization of aerospace research, concepts, and "spinoffs" for instructional purposes at all grade levels. PREREQUISITE: ICL 6761.

7001. Fundamentals of Curriculum. (3). (CIED 7001). Principles of organizing and developing the curriculum and curriculum directions, trends, and patterns. (Offered fall, spring, and summer semesters.)

7002-8002. Curriculum Leadership. (3). (CIED 7002-8002). Application of curriculum and leadership theory to modern educational practices; emphasis on developing leadership styles to ensure implementation. (Offered fall, spring, and summer semesters.)

7003-8003. Curriculum Design and Evaluation. (3). (CIED 7003-8003). Considers a variety of curriculum designs and their implications for educational practice. (Offered spring semester.)

7004-8004. Innovative Curricula: Development and Implementation. (3). (CIED 7004-8004). Generic issues, problems, processes, and strategies relative to changes occurring with the implementation of innovative curricula. PREREQUISITES: CIED 7002, 7050, ICL 7002, 7050. (Offered fall semester.)

7008-8008. Seminar in Curriculum Improvement. (3). (CIED 7008-8008). An introduction to curriculum decision-making. Includes curriculum development as a social process, issues and trends, theories and techniques of curriculum leadership, and translations of curriculum designs into practice.

INSTRUCTIONAL DESIGN AND TECHNOLOGY (IDT)

7048. Media and Technology Utilization. (2). (CIED 7048). Introduction to application of instructional technology to education; traditional media as well as emerging technologies. (Offered fall and spring semesters.)

7052-8052. Instructional Technology and the Learner. (3). (CIED 7052,8052). In-depth overview of field of instructional technology history, philosophy, and critical issues of the field; foundations and applications of instructional technology, and associated areas of research. (Offered spring and summer semesters.)

7060-8060. Microcomputers and Learning. (3). (CIED 7060-8060). Microapplications in the instructional process, including use of software, designing instructional programs, classroom management, use in training programs, overcoming microcomputer anxiety and creative uses for microcomputer in learning. (Offered fall, spring, and summer semesters.) This course cannot be used for degree requirements in the concentration of Instructional Design and Technology.

7061-8061. Computers, Technology, Learning, and the Classroom. (3). Computers and technology in the instructional process, including networking; problem solving using computer tools; use of national databases; use of peripherals including CD ROMs, laser discs and graphics; technological applications for the classroom; uses for technology in different content areas. PREREQUISITE: Must have had an introductory computer course or permission of instructor. (Offered each semester.)

7062-8062. Authoring Instructional Courseware. (3). Application of instructional design principles to creation of computer-based instruction; emphasis on use of authoring and scripting systems to create instructional software. PREREQUISITE: Must have had an introductory computer course or permission of instructor. (Offered spring and summer semesters.)

7063-8063. Seminar in Instructional Computing. (3). Analysis of issues and trends related to instructional computing and instructional technology in K-12 classroom. PREREQUISITE: Six hours of coursework in IDT. (Offered fall and spring semesters.)

7064-8064. School Change and the Internet. (3). Issues, processes, and strategies relative to changes occurring with design, implementation, and evaluation of internet technology in schools. PREREQUISITE: IDT 7065-8065, IDT 7061, or permission of instructor. (Offered fall and spring semesters.)

7070. Preparation of Instructional Materials. (3). (CIED 7070-8070). Design, preparation, and utilization of media and instructional materials; laboratory practice includes development and utilization of projected, non-projected, and computer-based materials. (Offered fall semester.)

7071-8071. Principles and Applications of Instructional Design. (3). (CIED 7071-8071). Application of instructional design principles to solve performance and instructional problems in educational and noneducational environments. (Offered fall and summer semesters.)

7072-8072. Advanced Instructional Media Production. (3). (CIED 7072-8072). Analysis and application of perceptual and learning principles to design and development of instructional media for use in educational and training applications. PREREQUISITE: CIED 7071, 8071, IDT 7071-8071 or permission of instructor. (Offered spring semester.)

7073-8073. Developing Interactive Instruction. (3). (CIED 7073-8073). Application of instructional design principles to design and development of interactive instruction using various instructional technologies. PREREQUISITE: IDT 7071-8071 or permission of instructor. (Offered fall semester.)

7074-8074. Theories and Models of Instructional Design. (3). critical examination of existing instructional design theories from the perspective of supporting research and application. PREREQUISITES: IDT 7071-8071 and a research or statistics course.

7075-8075. Instructional Consulting. (3). Application of interpersonal skills when working with subject matter experts and clients of design development, and production of instructional materials. PREREQUISITE: IDT 7071-8071.

7076-8076. Seminar and Workshop Design. (3). Technical and theoretical principles for developing effective seminars and workshops. Design, preparation and implementation skills are developed for effective adult learning. **PREREQUISITES:** IDT 7071-8071 and research or statistics course.

7078-8078. Seminar in Instructional Design and Technology. (3). (CIED 7078-8078). Professional and research problems in instructional strategies, design, and technology. **PREREQUISITE:** Permission of instructor. May be repeated once with a change in topic. (Offered spring semester of odd year.)

7230-8230. Instructional Text Design. (3). Introduction to application and techniques of generating and processing instructional text and graphics electronically. **PREREQUISITES:** IDT 7071-8071, 7072-8072, or permission of instructor. (Offered fall semester.)

7810-8810. Practicum in Instructional Design. (3-9). Planned, supervised experience in an instructional setting appropriate to student's specialization area of instructional design and technology, opportunity to synthesize knowledge and skills and demonstrate professional competencies in educational or training settings. **PREREQUISITES:** IDT 7071-8071 and 3 hours of IDT coursework.

†8091. Directed Readings in Instructional Design & Technology. (1-3). Individually directed readings culminating in synthesis of ideas. May be repeated with change in topic for 9 credits. **PREREQUISITES:** Permission of instructor.

†8092. Supervised Research in Instructional Design and Technology. (1-6). Collaborative research with faculty including planning, design, management analysis, and reporting of research. May be repeated. **PREREQUISITES:** Minimum of 12 hours and permission of instructor.

EARLY CHILDHOOD EDUCATION (ECED)

6107. Workshop in Montessori Instruction. (3). (CIED 6107). Analysis and application of Montessori principles of learning, teaching, sequence and use of didactic materials and classroom organization. Active student participation included. (Offered summer semester.)

6510. Early Childhood Education Programs and Practices. (3). Applying professional knowledge to early childhood education values and principles, programs and practices, issues, problems, and trends; and exploring early childhood teacher roles and responsibilities through observations in multicultural early childhood program settings. **PREREQUISITE:** TEP admission or permission of instructor. (Offered spring semester.)

6520. Planning and Facilitating Social Learning and Development. (3). Focuses on planning, implementing, and evaluating programs to facilitate young children's social learning and development from birth through age 8. Socialization and social science skills, knowledge, and dispositions will be addressed in the context of integrating instruction and learning with children's literature, art, music, mathematics, science, etc. **PREREQUISITE:** TEP admission or permission of instructor. (Offered spring semester.)

6530. Planning and Facilitating Math and Science Learning and Development. (3). Provides prospective teachers with the knowledge, skills, and dispositions necessary to plan for and facilitate development and learning of physical, logico-mathematical, and social knowledge of mathematics and science for children from birth through eight years. **PREREQUISITES:** ECED 6510, 6520, and TEP admission or permission of instructor. (Offered fall semester.)

6540. Planning and Facilitating Infant and Toddler Development. (3). Models, principles, curriculum and practices of developmentally appropriate infant-toddler care giving; emphasis on the teacher's knowledge, skills and dispositions necessary to plan and facilitate the development of infants and toddlers in group care settings. **PREREQUISITES:** ECED 6510, 6520, and TEP admission or permission of instructor. (Offered fall semester.)

7100-8100. Values and Principles of Early Childhood Education. (3). (CIED 7100-8100). Current curricula, trends, and issues related to early childhood education. (Offered fall and summer semesters of even years.)

101-8101. Nursery, Kindergarten and Primary Teaching. (3). (CIED 101-8101). Innovative methods and techniques for teaching nursery,

kindergarten, and primary children. (Offered spring and summer of odd years.)

7102-8102. Observations and Assessment of Infants, Toddlers, and Young Children With and Without Disabilities. (3). Developmental perspective on measurement and evaluation in early childhood years; standardized tests and informal measures, their advantages and disadvantages, and professional ethical issues regarding evaluating young children with and without disabilities. **PREREQUISITE:** EDPR 6301. (Offered fall semester.)

7103-8103. Literacy Development in Early Childhood. (3). (CIED 7103-8103). Analysis of role of play in young children's development and learning from birth through age eight; developmentally appropriate applications to young children's literacy learning. (Offered spring semester.)

7104-8104. Play and Early Childhood Development. (3). (CIED 7104-8104). Analysis of role of play in young children's development and learning from birth through age eight; developmentally appropriate applications of play theory and research to young child's physical, intellectual, language, social, and emotional development and learning. (Offered summer semester.)

7106-8106. Montessori in Early Childhood Education. (3). (CIED 7106-8106). Montessori theory, philosophy, pedagogy, and didactic apparatus and research. Analysis of past and current research of Montessori programs. (Offered fall semester of odd year.)

7107-8107. Constructivism in Early Childhood Education. (3). Analysis of constructivist theory and research with emphasis on implications for early childhood curriculum, the ecology of the learning environment, and the role of the teacher. **PREREQUISITES:** Licensure and experience in early childhood education or a related area. (Offered spring semester.)

7108-8108. Seminar in Early Childhood Education. (3). (CIED 7108-8108). Analysis of contemporary issues and trends in the field of early childhood education. May be repeated for a maximum of 6 hours of credit. (Offered fall semester of odd year.)

†8110. Directed Readings in Early Childhood Education. (1-3). Individually directed reading; written report required. May be repeated for a maximum of 9 credits. **PREREQUISITE:** Permission of instructor.

†8112. Supervised Research in Early Childhood Education. (1-6). Collaborative research with faculty, including planning, design, management, analysis, and reporting of research. May be repeated. **PREREQUISITES:** Minimum of 12 hours in concentration and permission of instructor.

†8114. Advanced Seminar in Early Childhood Education Research. (3-6). Survey and analysis of current research on selected topics in early childhood education; implications for applications in early childhood program settings. **PREREQUISITES:** EDPR 7521 or 7523, 8541, 8561, or consent of instructor. (Offered fall semester of odd years.)

ELEMENTARY EDUCATION (ICL)

7040. Integrated Teaching Strategies: Elementary. (3). Curriculum, methods, and materials for teaching mathematics, science, and social studies to elementary and middle school students. [For individuals in Elementary Accelerated MAT program only.]

7130-8130. Elementary School Curriculum. (3). (CIED 7130-8130). Analysis of curriculum theories, materials, and practices as they affect the child's potential and growth. (Offered spring semester of even year.)

7138-8138. Seminar in Elementary Education. (3). (CIED 7138-8138). Analysis of contemporary issues and trends in elementary education. (Offered spring semester of odd year.)

SECONDARY EDUCATION (ICL)

7160-8160. Modern Methods in Secondary Education. (3). (CIED 7160-8160). Secondary school teaching and how the secondary school can perform its role most effectively.

7165-8165. The Middle School. (3). Investigation of emerging concepts of the middle school and trends in classroom procedures and curriculum.

7168-8168. Seminar in Secondary Education. (3). (CIED 7168-8168). Analysis of problems, current issues, and trends in secondary education.

7170-79. Specialized Teaching Methods. (2). (CIED 7170-79). Objectives and philosophy of subject field as applied to secondary education; consideration of issues and research in content area; examination of curricular scope and sequence; application of adaptive and unique instructional strategies and methods to specific area; examination, selection, and utilization of curricular and instructional materials.

7170. Specialized Methods in English Education. (2). (CIED 7170). (Offered fall semester.)

7171. Specialized Methods in Mathematics Education. (2). (CIED 7171). (Offered fall semester.)

7172. Specialized Methods in Social Studies Education. (2). (CIED 7172). (Offered fall semester.)

7173. Specialized Methods in Science Education. (2). (CIED 7173). (Offered fall semester.)

7174. Specialized Methods in Foreign Language. (2). (CIED 7174). (Offered fall semester.)

SPECIAL EDUCATION (SPED)

6801-10. Workshop in Special Education. (1-9). For the professional in fields of special education. Intensive study of current methodologies, research, issues, and trends in various areas of exceptionality and disability. See *Schedule of Classes* for topic. May be repeated when topic varies.

6900. Consultation with School/Family/Community. (3). Current professional development issues that impact on educator interaction with students, parents, and other professionals including the development of communication and consultation skills. (Offered fall and spring semesters.)

***7000. Psycho-Educational Problems of Exceptional Children and Adults. (3).** Study of the relevant research dealing with the physical, mental, emotional, and social traits of all types of individuals who are exceptional. Consideration of major current problems and practices in the development of various programs.

**Not required if equivalent course taken at the undergraduate level. (Substitutions must be approved by adviser.) (Offered fall, spring, and summer semesters.)*

7001-8001. Tests and Measurements for Exceptional Children and Adults. (3). Overview of psychoeducational assessment practices and issues with emphasis on educational and psychological tests used in special education; focus on informed interpretation of test data and implications for instructional practice. PREREQUISITE: SPED 7000. (Offered fall, spring, and summer semesters.)

7002-8002. Independent Study in Special Education. (1-6). Opportunity for self-directed, independent study in special education. PREREQUISITE: Permission of instructor.

7010-8010. Seminar in Special Education. (3). Continuing series of professional seminars designed to provide a forum for discussion of major problems, issues, trends, and research concerning individuals with disabilities. May be repeated for a maximum of 6 hours credit. PREREQUISITE: Permission of instructor. (Offered fall and spring semesters.)

7025. Microcomputers in Special Education. (3). Emphasis on matching software programs with the unique learning needs of students with disabilities. Adaptive interfacing techniques for students who have physical and/or sensory disabilities also addressed.

†7041-8041. Advanced Practicum in Special Education. (3-6). Supervised experience(s) with individuals with mild disabilities in cooperation with university, local, state, and/or national educational personnel. PREREQUISITE: Permission of instructor.

†7042-8042. Advanced Internship in Special Education. (3-6). Supervised experience(s) with individuals with moderate to severe disabilities in cooperation with university, local, state, and/or national education personnel. PREREQUISITE: Permission of instructor.

7050. Teaching the Exceptional Learner. (2-3). Overview of special education, including characteristics and education of students with various exceptionalities. Emphasis on developing skills for effective

teaching of exceptional student in regular classroom. (Offered summer semester.)

7060-69-8060-69. Special Topics in Special Education. (1-3). Current topics in special education. May be repeated with a change in topic. See *Schedule of Classes* for topics.

7070-79. Workshop in Special Education. (1-9). Opportunity for continuing growth to the professional in fields of special education, such as intensive study in methodologies, research, issues, and trends in areas of exceptionalities and disabilities. May be repeated when topic varies. See *Schedule of Classes* for topics.

7101-8101. Foundations of Early Childhood Special Education. (3). Overview of early childhood special education including current issues, laws, and practices that influence programs serving children with disabilities, birth through age eight. Emphasis on research dealing with physical, mental, emotional, and social characteristics of young children with various exceptionalities. PREREQUISITES: SPED 7000 or permission of instructor. (Offered fall semester.)

7121-8121. Educational Programming for Pre-School Children with Disabilities. (3). Methods involved in developmental assessment and educational planning for children with disabilities in pre-school years. PREREQUISITE: SPED 7101-8101. (Offered spring semester.)

†7141-8141. Practicum in Early Childhood Special Education. (3-6). Observation and supervised experience in early childhood special education settings. PREREQUISITES: ECED 6540 and SPED 7121-8121.

7201-8201. Characteristics of Individuals with Mild Disabilities. (3). Examination of etiological, psychological, social, and physical conditions related to the educational performance of individuals with disabilities in developmental life periods. PREREQUISITE: SPED 7000 or equivalent. (Offered fall semester.)

7203-8203. Characteristics of Individuals with Emotional Disturbance. (3). Characteristics of persons with emotional and behavioral disorders. Emphasis on social, psychological, and biological theories of causality, assessment and education with a variety of emotional and/or behavioral problems. (Offered fall semester of odd years.)

7211-8211. Methods I: Academic Instruction in Special Education. (3). Academic methods, remediation, and educational planning for individuals with disabilities. PREREQUISITE: SPED 7000, ICL 7000 or equivalent. (Offered fall semester.)

7221-8221. Methods II: Behavior Management in Special Education. (3). Methods of changing behaviors of individuals with mild to severe disabilities in various educational settings. PREREQUISITE: SPED 7000 or equivalent. (Offered spring and summer semesters.)

7222-8222. Methods and Techniques of Teaching Emotionally Disturbed. (3). Procedures for educating individuals with emotional disturbance. Emphasis on teaching behaviors, psycho-educational management of behavior, and affective teaching techniques. PREREQUISITE: Permission of instructor. (Offered spring and summer semesters of even years.)

7231-8231. Advanced Seminar in the Psycho-Social and Educational Aspects of Emotional Disturbances. (3). Theoretical and research bases for present practices in the education and treatment of emotional disturbances. PREREQUISITE: Permission of instructor.

†7241. Supervised Practicum in Special Education. (3-9). Enhance student teaching in settings with individuals who have disabilities. PREREQUISITE: Permission of instructor.

7401-8401. Psycho-Social and Educational Aspects of Learning Disabilities. (3). Psychological, social, and educational characteristics of individuals with learning disabilities. Theories and philosophies regarding the treatment, etiology, and management consideration stressed. (Offered fall semester.)

7411-8411. Methods of Teaching Children with Learning Disabilities. (3). Remedial approaches for children with learning disabilities. Emphasis on developmental sequence and educational practices. (Offered spring semester.)

7431-8431. Advanced Theories in the Classroom Management of Learners with Severe Disabilities. (3). Emphasis placed on practical application of behavior change technology for learners with a variety of disabilities.

501-8501. Psycho-Social and Educational Aspects of Mental Retardation. (3). Historical, philosophical, and societal perceptions of individuals with mental retardation. Emphasis on social, emotional, physical, and learning characteristics. (Offered fall semester.)

511-8511. Mental Retardation. (3). Emphasis on diagnostic and pedagogical techniques used with children who have mental retardation at the pre-academic level. **PREREQUISITES:** SPED 7000, 7501, or their equivalents. (Offered spring semester.)

513-8513. Secondary School Transition. (3). Transition issues, life skills, and vocational education to prepare students with exceptionalities for life after secondary school will be emphasized. Course content will also focus on legal issues, family concerns, and effective transition programming. Familiarity with available community resources and the importance of interagency collaboration is also stressed. (Offered Spring odd years.)

501-8601. Psycho-Social and Physical Aspects of Severe Disabilities. (3). Research related to etiological, psychological, cognitive, social, and physical characteristics of children who have moderate, severe, and profound disabilities. **PREREQUISITE:** SPED 7000. (Offered fall semester.)

511-8611. Methods of Teaching Individuals with Severe Disabilities. (3). Practical methods, curricula, and materials for teaching learners who have moderate to severe disabilities. (Offered spring semester.)

521-8621. Health Related Issues and Aspects in Special Education. (3). An overview of medical procedures performed as related services for children with disabilities in the classroom setting; includes medication administration, seizure monitoring, CPR, first aid, suctioning, breathing assistance, external drainage procedures, positioning, and bandaging. (Offered spring semester.)

5622. Directed Readings in Special Education. (1-3). Individually directed readings culminating in synthesis of ideas. May be repeated with change of topic for 9 hours. **PREREQUISITE:** Permission of instructor.

5623. Supervised Research in Special Education (1-6). Collaborative research with faculty, including planning, design, management, analysis, and reporting of research. May be repeated. **PREREQUISITES:** Minimum of 12 hours in concentration and permission of instructor.

5524. Advanced Seminar in Special Education Research. (3-6). Survey and analysis of reading research to create background information for study of selected topics in special education; translating research into practical applications in special education program settings. **PREREQUISITES:** EDPR 7521 or 7523, 8541, 8561, or consent of instructor. (Offered fall semester of odd years.)

Grades of S, U, or IP will be given.

ENGLISH/LANGUAGE ARTS EDUCATION (ICL)

700-8300. Contemporary Issues in Language Arts Instruction. (3). (CIED 7300-8300). Analysis of current trends and issues in the teaching of language arts: theory and research related to teaching models and their application in the language arts. (Offered fall, spring, and summer semesters.)

01-8301. The Teaching of Children's Literature in the Elementary School. (3). (CIED 7301-8301). Methods of teaching children's literature in the elementary school, including story telling, dramatization, oral speech work. (Offered spring semester.)

02-8302. Teaching Literature to Adolescents. (3). (CIED 7302-8302). Methods of teaching adolescent literature including fiction, non-fiction, drama, and poetry. (Offered spring semester.)

03-8303. English/Language Composition: Curriculum of the Secondary School. (3). (CIED 7303-8303). Emphasis on developing and implementing a sequential curriculum in secondary school language composition. (Offered fall semester.)

04-8304. Memphis Urban Writing Institute I. (3). (Same as ENGL 12). Intensive study of writing research, current writing practices, and uses and trends related to K-12 writing instruction. **COREQUISITE:** ENGL 7305-8305 or ENGL 7813. (Offered summer session.)

05-8305. Memphis Urban Writing Institute II. (3). (Same as ENGL 13). Prepares K-12 teachers to improve their writing practices and

assume a leadership role in writing instruction in their schools. **COREQUISITE:** ICL 7304-8304 or ENGL 7812. (Offered summer session.)

7308-8308. Seminar in English/Language Arts. (3). (CIED 7308-8308). Emphasis on oral and written language models and how these models can be used in the development of a student-centered language arts curriculum. K-12. (Offered summer semester.)

MATHEMATICS EDUCATION (ICL)

7500-8500. Advanced Mathematics in the Elementary School. (3). (CIED 7500-8500). Models of elementary and middle school mathematics instruction; history, philosophy, and research supporting those models. **PREREQUISITE:** Teacher licensure. (Offered fall and summer.)

7501-8501. Elementary Mathematics Education Curriculum. (3). (CIED 7501-8501). Issues and trends in elementary school mathematics curriculum. Appropriate current reports of professional groups will be considered. (Offered fall semester of odd year.)

7502-8502. Teaching Mathematics in the Secondary School. (3). (CIED 7502-8502). Consideration of principles and techniques of teaching mathematics in secondary schools including study and evaluation of materials of instruction. **PREREQUISITE:** Permission of instructor. (Offered fall semester.)

7503-8503. Secondary Mathematics Education Curriculum. (3). (CIED 7503-8503). Analysis of the secondary mathematics curriculum as it relates to sound educational practices.

7504. Methods for Teaching Mathematics in the Elementary and Middle Grades. (3). Instructional techniques, curriculum, and materials for teaching mathematics to elementary and middle school students. **PREREQUISITE:** Admission to TEP. (Offered fall and spring.)

7508-8508. Seminar in Mathematics Education. (3). (CIED 7508-8508). Study and discussion of selected mathematics education topics of concern or special interest. May be repeated with a change in topics.

READING (RDNG)

7540-8540. Innovations for Teaching Literacy in the Classroom. (3). Foundations, issues, processes, and strategies relative to changes occurring with teaching of literacy; focus on linking theory to practice. Restricted to M.S. and Ed.D. students. (Offered fall and spring semesters.)

7541-8541. Advanced Assessment of Reading Performance. (3). (CIED 7541-8541). Principles of assessment, evaluation, and prognosis in reading; formal and informal procedures and instruments used in assessing reading and related cognitive abilities; multiple causation approach to reading difficulties. **PREREQUISITES:** Teaching experience and CIED 7540 or RDNG 7540 or permission of the instructor. (Offered fall semester.)

7542-8542. Alternative Procedures for the Treatment of Reading Problems. (3). (CIED 7542-8542). Application of differentiated instruction within a clinical setting to meet the needs of the disabled reader. **PREREQUISITES:** CIED 7540 and 7541 or RDNG 7540 and 7541 or permission of instructor. (Offered spring semester.)

7543-8543. Advanced Reading Instruction for the Special Learner. (3). (CIED 7543-8543). Etiology of reading disabilities unique to various types of handicapped children. Planning and treatment selection related to gifted and talented, learning disabled, mentally retarded, physically handicapped, and other categories of special learner. (Offered fall semester of odd year.)

7544-8544. Reading and Study Skills in the Content Areas. (3). (CIED 7544-8544). Research-based theories and steps necessary for academic disciplines: techniques for improving vocabulary, cognition, study skills, and reading rate. (Offered fall and summer semesters.)

7545. Teaching Reading in Subject Areas. (2-3). (CIED 7545). Methods, materials, and organizational patterns by which reading skills are developed and improved through integration with teaching strategies in subject areas. (Offered fall, spring, and summer semesters.)

7546-8546. Computer Applications in Reading Instruction. (3). (CIED 7546-8546). Incorporating computers in the reading classroom and curriculum development of educationally relevant reading programs.

PREREQUISITE: CIED 7060-8060 or ICL 7060-8060 or permission of instructor. (Offered fall semester of even year.)

7547-8547. Reading Clinic. (3-6). (CIED 7547-8547). Emphasis on practical experiences of clinical diagnosis and treatment. **PREREQUISITES:** CIED 7540-8540 or ICL 7540-8540 or permission of instructor. (Offered summer semester of even year.)

7549. Foundations of Language and Reading Development. (2-3). (CIED 7549). Instructional techniques, curriculum, and materials for teaching language arts and reading. **PREREQUISITES:** Admission to TEP and ICL 7000. (Students seeking licensure in English must enroll in the summer semester.) (Offered fall and spring for M.A.T., ECED, ELED, SPED. Offered summer for M.A.T. secondary students only.)

7550. Evaluation and Remediation of Language and Reading Problems. (3). (CIED 7550). Classroom procedures for the diagnosis and correction of language and reading processes in the elementary school. Restricted to students in the M.A.T. or licensure program. **PREREQUISITE:** CIED 7549 or RDNG 7549. (Offered fall, spring, and summer semesters.)

8548. Advanced Seminar in Reading Research. (3-6). (CIED 7548-8548). Survey and analysis of reading research to create background information for study of selected topics in reading; translating research into practical applications in classroom and school. **PREREQUISITE:** EDPR 7521, 7523, 7541, or consent of instructor. May be repeated for up to six hours. (Offered spring semester of odd year.)

†8551. Directed Readings in Reading Education. (1-3). Individually directed readings culminating in synthesis of ideas. May be repeated with change in topic for 9 credits. **PREREQUISITE:** Permission of instructor.

†8552. Supervised Research Reading. (1-6). Collaborative research with faculty, including planning, design, management, analysis, and reporting of research. May be repeated. **PREREQUISITES:** Minimum of 12 hours in concentration and permission of instructor.

SCIENCE EDUCATION (ICL)

7600-8600. Advanced Science in the Elementary and Middle School. (3). Models of science instruction; history, philosophy, and research supporting these models. **PREREQUISITE:** Teacher licensure (Offered fall, spring, and summer semesters.)

7601-8601. Elementary School Science Curriculum. (3). (CIED 7601-8601). Examination of science curriculum materials. Focus on procedures for evaluation of curriculum and materials and analysis of local curricula in science. Includes techniques for conducting science workshops and inservice programs. (Offered spring semester.)

7602-8602. Teaching Science in the Secondary School. (3). (CIED 7602-8602). An examination and analysis of modern science teaching strategies in the secondary school. Emphasis on information processing and classroom learning strategies. (Offered fall semester.)

7603-8603. Secondary School Science Curriculum. (3). (CIED 7603-8603). Analysis of secondary science content and materials. Emphasis on current concepts of the science curriculum and the selection of appropriate materials for teaching the various sciences. (Offered spring semester.)

7605. Methods for Teaching Science in the Elementary and Middle School. (3). Instruction techniques, curriculum, and materials for teaching science to elementary and middle school students. **PREREQUISITES:** Admission to TEP. (Offered fall and spring.)

7608-8608. Seminar in Science Education. (3). (CIED 7608-8608). A survey of selected problems and topics in science education. (Offered spring semester of even year.)

SOCIAL STUDIES EDUCATION (ICL)

7650-8650. Advanced Social Studies in the Elementary School. (3). (CIED 7650-8650). Advanced strategies for social studies instruction and history, philosophy, and research supporting those strategies. **PREREQUISITE:** Teacher licensure (Offered fall semester.)

7651-8651. Curriculum Development in Elementary/Middle School Social Studies. (3). (CIED 7651-8651). Emphasis on current curriculum developments consistent with the needs, interests, and social

problems of elementary/middle school children. Includes research, new programs, and issues related to social studies curriculum.

7652-8652. Teaching of Social Studies in Middle School/Secondary School. (3). (CIED 7652-8652). Consideration of principles and techniques for teaching secondary social studies. (Offered fall semester.)

7653-8653. Middle School/Secondary Social Studies Curricula. (3). (CIED 7653-8653). Analysis of programs and curricular materials for secondary social studies education.

7654. Methods for Teaching Social Studies in Elementary and Middle Schools. (3). Curriculum, methods, and materials for teaching social studies to elementary and middle school students. **PREREQUISITE:** Admission to TEP. (Offered fall, spring and summer semesters.)

7658-8658. Seminar in Social Studies Education. (3). (CIED 7658-8658). A survey of current emphases in social studies education.

GIFTED EDUCATION (ICL)

7801-8801. The Talented and Mentally Gifted. (3). (CIED 7801-8801). Historical and societal perceptions and definitions of talented and mentally gifted individuals and their social, emotional, and learning processes. (Offered fall semester of odd year.)

7802-8802. Special Populations of the Gifted. (3). (CIED 7802-8802). Examination of the nature and needs of gifted and talented student whose performance is affected by some condition interfering with optimal growth. **PREREQUISITE:** SPED 7801 or ICL 7801. (Offered fall semester of even year.)

7811-8811. Methods of Teaching the Gifted and Academically Talented. (3). (CIED 7811-8811). Teaching strategies for fostering gifted behavior at preschool, elementary and secondary levels. Procedure and criteria of evaluation, curriculum sequences and guides, alternative strategies for curriculum development, writing and implementing individualized educational plans. **PREREQUISITE:** SPED 7801-8801 or ICL 7801-8801. (Offered spring semester of even year.)

7822-8822. Advanced Methods of Teaching Gifted and Academically Talented. (3). (CIED 7822-8822). Examination of provisions of services to gifted students in other than traditional enrichment programs. **PREREQUISITES:** SPED 7801, 7811 or ICL 7801, 7811. (Offered spring semester of odd year.)

LIBRARY SCIENCES (ICL)

6111. Library Materials for Children. (3). (CIED 6111). Evaluation and selection of books and related library materials for leisure interests and curriculum needs of elementary school children; extensive reading, introduction to selection criteria, bibliographic aids, author and illustrators, and types of literature and information books.

6121. Library Materials for Young People and Adults. (3). (CIED 6121). Evaluation and selection of books and related library materials for leisure interests and curriculum needs of young people and adults from junior high school up; intensive reading, introduction to selection criteria, bibliographic aids, authors and illustrators, and types of literature and information books.

7132. Cataloging and Classification. (3). (CIED 6502, CIED 7132). Introduction to principles and techniques of cataloging and classification of books and other library materials.

7133. School Library Administration. (3). (CIED 6503, CIED 7133). Organization and administration of elementary and secondary school libraries, including standards, evaluation, facilities, equipment, support, student assistants, and relationship to instructional and guidance programs of school.

7730. Foundations of Librarianship. (3). (CIED 6504, CIED 7730). Introduction to librarianship as a profession and library as institution in cultural and political setting; influences of social issues, societal needs, professional organizations, and federal legislation on goals, ethics, organization, programs, and problems of libraries and librarians.

7731. Introduction to Bibliography. (3). (CIED 6501, CIED 7731). Theory and purpose of bibliography as form of access to information; emphasis on general reference sources; introduction to principles, practices, and methods of reference service.

GENERAL (ICL)

501. Workshop in Curriculum and Instruction: Environmental Education. (3). (CIED 6601). Overview of environmental issues and problems; curriculum development, implementation, and evaluation.

5701-10. Workshop in Curriculum and Instruction. (1-9). (CIED 701-10). Various areas of the curriculum and elements of instruction are explored. Active student participation is included. See departmental listing in *Schedule of Classes* for exact topics.

5950-59. Special Topics in Curriculum and Instruction. (1-3). (CIED 5950-59). Designed to allow for study of current topics in the areas of curriculum and instruction at all levels. May be repeated with a change in topic and content emphasis. See departmental listing in *Schedule of Classes* for exact topics.

7000. Analysis and Practice of Teaching I. (3). (CIED 7000). Analysis of research on instruction and teaching practices; implementation of research based on strategies of developing instruction, facilitating and assessing student learning. (Offered fall, spring, and summer semesters.)

7010. Analysis and Practice of Teaching II. (3). (CIED 7010). Integrative, interdisciplinary, and integrative study of models of teaching, curriculum assessment and evaluation, reading in content area, mainstreaming, multicultural concerns, and instructional technology; emphasis on theory, research, and skills through simulations and microteaching. PREREQUISITE: CIED 7000 or ICL 7000.

7020. Professional Development Seminar I. (1-3). (EDUC 7020). Interpersonal and group process skills needed for teaching.

7021. Professional Development Seminar II. (1-3). (EDUC 7021). Specialty teaching area in pedagogical skills application.

7022. Professional Development Seminar III. (1-3). (EDUC 7022). Teacher roles, professional relationships, and professional development.

7030. Assessment and Evaluation. (2). (EDUC 7030). Test construction and methods of evaluation; emphasis on teacher made tests, standardized tests, test administration, test data management, interpretation and application of test data to instructional decisions, and reporting test results to students and parents.

7032. Classroom Management. (2). (EDUC 7032). Managing classroom environment; emphasis on constructive management techniques. Application of knowledge of human development and teaching and learning principles to development of classroom management systems.

7050-8050. Advanced Instructional Strategies. (3). (CIED 7050-8050). Analysis of theoretical models of instruction and related research; emphasis on application to various instructional settings. (Offered fall, spring, and summer semesters.)

8051-8051. Simulation. (1-3). (CIED 7051-8051). Surveying, analyzing, and designing simulation activities appropriate for classroom situations, individual, and group participatory activities.

8054-8054. Creativity in Teaching and Curriculum. (3). (CIED 7054-8054). Instructional strategies relevant to development of creative potential. Activities include problem-solving, metaphoring, inventing, synectics, evaluation, questioning, brainstorming, creative writing and thinking, and spontaneity.

8058-8058. Values Education. (3). Major movements related to values education and analysis of strategies applicable to educational settings. (Offered fall semester.)

7059. Models of Instruction. (3). (CIED 7059). Analysis of theoretical research support for selected models of instruction; emphasis on teaching applications. (Offered fall, spring, and summer semesters.)

79-8079. Implications of Research for Instruction and Curriculum. (12). (CIED 7079-8079). Identifies and summarizes past and current research in curriculum improvement and instruction in early childhood education, reading, language arts, mathematics education, and science education. PREREQUISITE: EDRS 7521 or EDPR 7521 or permission of instructor. (Offered fall semester of odd year.)

80. Curriculum and Instruction for the Multiethnic School. (3). Survey, analysis, and design of curriculum and instruction that considers the multiethnic nature of students in the urban school and facilitates their academic and social growth.

8081. Curriculum for Teacher Education. (3). Analysis of the structure, content, delivery and outcomes of curriculum and instruction in traditional and alternative teacher education programs.

8082. Seminar in Urban Education. (3). Analysis of contemporary issues and trends in urban education.

8083. Seminar in Rural Education. (3). Analysis of contemporary issues and trends in rural education.

7701-8701. Advanced Workshop in Instruction and Curriculum. (1-9). (CIED 7701-8701). Various areas of curriculum and elements of instruction at advanced levels. Active student participation. Topics vary. See *Schedule of Classes*.

7704-8704. Workshop: Newspaper in the Classroom. (3). (CIED 7704-8804)

7705-8705. Managing the Learning Environment. (3). (CIED 7705-8705). Teacher's role in integrated approach to managing classroom's physical and behavioral learning environments, school curriculum, and pupil development and learning. (Offered fall, spring, and summer semesters.)

7706. Family and Community Relations for Teachers. (3). (CIED 7706). Analysis of family, cultural, and community patterns in relation to the teacher's roles and responsibilities for building educational partnerships. (Offered fall, spring, and summer semesters.)

7707-8707. Applied Analysis of Theory and Practice in Classroom Behavior Management. (3). Solving classroom organization and management problems; theory and practice related to human growth, development, behavior, culture, and learning applied to management problems for design of solutions. PREREQUISITE: ICL 7705-8705. (Offered spring and summer semesters.)

7800. Advanced Clinical Practicum for Initial Teacher Licensure or Additional Endorsement. (3-9). Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to compliment on-campus course study with actual on-site professional experience. COREQUISITE: ICL 7993. (Offered fall and spring semesters.)

†7803-8803. Internship in Kindergarten. (3-9). (CIED 7800-8800). Includes student teaching, supervised practicum and other similarly organized professional experiences. Designed to compliment on-campus course study with actual on-site professional experience.

†7804-8804. Student Teaching in Early Childhood Settings. (3-9). (CIED 7800-8800). Includes student teaching experiences in both PreKindergarten or Kindergarten, and Primary grades 1-3.

†7805-8805. Internship in Elementary School. (3-9). (CIED 7800-8800). Includes student teaching, supervised practicum and other similarly organized professional experiences. Designed to compliment on-campus course study with actual on-site professional experience.

†7806-8806. Student Teaching in Elementary School. (3-9). (CIED 7800-8800). Includes student teaching, supervised practicum and other similarly organized professional experiences. Designed to compliment on-campus course study with actual on-site professional experience.

†7807-8807. Internship in Secondary School. (3-9). (CIED 7800-8800). Includes student teaching, supervised practicum and other similarly organized professional experiences. Designed to compliment on-campus course study with actual on-site professional experience.

†7808-8808. Student Teaching in Secondary School. (3-9). (CIED 7800-8800). Includes student teaching, supervised practicum and other similarly organized professional experiences. Designed to compliment on-campus course study with actual on-site professional experience.

†7809-8809. Reading Research Practicum. (3-9). (CIED 7800-8800). Participation is required in a supervised research practicum. The experience includes either a clinical or field-based component. The development of a research paper is required.

7850-8850. Supervision of Student Teaching. (3). (CIED 7850-8850). Principles and techniques of student teaching supervision. Designed for supervising teachers, administrators, coordinators of student teaching programs, and college personnel.

7950-69-8950-69. Advanced Topics in Instruction and Curriculum. (1-3). (CIED 7950-59-8950-59). Current topics in areas of instruction and curriculum at advanced levels. May be repeated with change in topic and content emphasis. See *Schedule of Classes* for topics.

7991-8991. Independent Study in Instruction and Curriculum. (1-9). (CIED 7991-8991). Includes special problems, field studies, and other similarly organized professional experiences under the direct supervision of a faculty member within the department. Emphasis on student planning, initiating, conducting, and completing independent studies, projects, etc., designed to meet programmatic goals and individual needs.

†7992. Master's Project. (3). (CIED 7992). Designed as a culminating experience. Direct participation is required for the successful completion of a field-study, on-site project, or other classroom based experience. (Offered fall and spring semesters.) This course must be taken at the end of all coursework. ID&T students must contact advisor before registering for Master's Project. **PREREQUISITE:** EDPR 7523 or EDPR 7521.

7993. Professional Seminar. (1). An integrative, capstone seminar for advanced post-baccalaureate teacher certification students. Students will apply reflective, analytical, and critical thinking to selected issues regarding school curriculum, teaching methods, professional ethics, legal issues, leadership and advocacy, professional relations, communication and problem solving.

7994-8994. Developing Proposals. (3). Procedures and techniques for development of research, project, and grant proposals. Emphasis on development of proposal for research study or in response to funding request. (3). **PREREQUISITES:** ICL 7079-8079 and 9 hours of research or permission of instructor. (Offered spring semesters.)

†7996. Thesis. (1-6). (CIED 7996). Prospectus must be approved by the faculty committee directing this research study. Application for writing thesis must be filed with the Director of Graduate Studies.

†8000. Specialist Culminating Experience. (1-6). (CIED 8000). Thesis, internship, field study, or special project designed under direction of student's committee. Serves as capstone experience in Education Specialist Program.

†8995. Research Residency Seminar. (3-6). (CIED 8995). Survey and analysis of research in the varied disciplines of curriculum and instruction. To be taken during the doctoral residency. May be repeated for a maximum of 6 hours of credit. (Offered fall, spring, and summer semesters.)

†8996. Teaching in Instruction and Curriculum Leadership for Graduate Assistants. (1-3). Overview and practical demonstrations of the art of teaching for graduate assistants. May be repeated.

†8997. Research Skills in Instruction and Curriculum Leadership for Graduate Assistants. (1-3). Research design, practice, and methodology in Instruction and Curriculum Leadership for graduate assistants. May be repeated.

†8998. Directed Readings in Instruction and Curriculum Leadership. (1-3). Individually directed readings culminating in synthesis of ideas. May be repeated with change in topic for 9 hours. **PREREQUISITE:** Permission of Instructor.

†8999. Supervised Research in Instruction and Curriculum Leadership. (1-6). Collaborative research with faculty including planning, design, management, analysis, and reporting of research. May be repeated for maximum of 12 hours. **PREREQUISITES:** Minimum of 12 hours in concentration and permission of instructor.

†9000. Doctoral Dissertation. (1-12). (CIED 9000). Credit may be earned over a period of several semesters. The dissertation may be an organized scientific contribution or a comprehensive analysis of theory and practice in a specific area.

EDUCATIONAL SERVICES (EDSV)

6350. Instructional Development for Training. (3). Instructional development techniques and application in training settings, principles of curriculum development, instructional delivery, and evaluation.

6450. Media Development for Trainers. (2). Practical preparation of audiovisual materials for training, applying instructional design techniques, and development of media presentation skills.

6550. Organization and Management of Training Programs. (3). Development and management of instructional programs in non-school settings; focus on goals, personnel, operational and budgetary considerations. **PREREQUISITE:** MGMT 3110 or permission of instructor.

†Grades of S, U, or IP will be given.

Leadership

THOMAS E. GLASS, Ed.D., *Chair*

REGINALD L. GREEN, Ed.D.,
Coordinator of Graduate Studies
Room 113, Patterson Hall
(901) 678-2368

E-Mail: tglass@memphis.edu
www.coe.memphis.edu/coe/LEAD/leadership.htm/

MEMBERS

- ROBERT H. BEACH, *Professor*
Ph.D. (1979), Florida State University [2003]
NATHAN C. ESSEX, *Professor*
Ph.D. (1975), University of Alabama [2003]
THOMAS E. GLASS, *Professor*
Ed.D. (1972), Wayne State University [2004]
REGINALD GREEN, *Associate Professor*
Ed.D. (1975), University of Missouri [2003]
BARBARA K. MULLINS, *Assistant Professor*
Ph.D. (1992), Florida State University [2002]
PATRICIA H. MURRELL, *Professor*
Ed.D. (1968), University of Mississippi [2000]
JAMES I. PENROD, *Professor*
Ed.D. (1979), Pepperdine University [2002]
ROBERT RIGGS, *Professor*
Ed.D. (1970), Memphis State University [2000]
JOHN C. SMART, *Professor*
Ph.D. (1971), University of Kentucky [2000]
AZIZ TALBANI, *Assistant Professor*
Ph.D. (1991), McGill University [2002]
PAUL M. TERRY, *Assistant Professor*
Ed.D. (1993), University of Arkansas at Fayetteville [2003]

ASSOCIATE MEMBERS

- JOHN R. PETRY, *Associate Professor*
Ed.D. (1973), George Peabody College [2000]
NEIL J. SHIPMAN, *Associate Professor*
Ed.D. (1980), University of Southern California [2004]

ADJUNCT MEMBERS

- KERN ALEXANDER
Ph.D. (1965), Indiana University [1999]
FLOYD AMANN
Ph.D. (1984), University of Arizona [2001]
KAREN BOWYER
Ph.D. (1971), University of Alabama [2001]
RANDY CROWDER
Ed.D. (1993), University of Arkansas [2002]
JOHN T. FITE
Ed.D. (1994), Vanderbilt University [1999]
RICHARD F. FLYNN
Ed.D. (1975), Ball State University [2000]
SANDRA J. T. FLYNN
Ph.D. (1985), Kansas State University [2000]
JOHN K. FOLGER
Ph.D. (1951), University of North Carolina [2000]
REBECCA GIANNINI
Ed.D. (1988), Memphis State University [2001]
JEANETTE W. GLOVER
Ed.D. (1992), Memphis State University [2001]
MARTHA M. GLOVER
Ed.D. (1993), Memphis State University [2000]
DWIGHT L. HEDGE
Ed.D. (1981), Memphis State University [2001]
ROBERT A. MARCZYNSKI
J.D. (1981), University of Toledo [2001]
BRUCE MAYS
Ed.D. (1982), University of Mississippi [2001]
HERBERT L. MCCREE
Ed.D. (1996), The University of Memphis [2001]

THEODORE MEYERS

Ed.D. (1987), Memphis State University [2001]

MARIE MILAM

Ed.D. (1988), Memphis State University [2001]

DAVID M. MOORE

Ed.D. (1976), Memphis State University [2001]

SUSAN PETERSON-MANSFIELD

Ed.D. (1989), The University of Memphis [2002]

DANIEL J. POJE

Ed.D. (1985), Memphis State University [2001]

JOHN BENTLEY RAWDON

Ed.D. (1980), Memphis State University [2001]

PATRICIA P. RAY

Ed.D. (1991), Memphis State University [2001]

JAMES E. SELBE

Ed.D. (1995) The University of Memphis [2000]

R. EUGENE SMITH

Ph.D. (1979), University of Mississippi [2001]

W. NEWTON SUTER

Ph.D. (1983), Stanford University [2000]

LARRY D. VICK

Ed.D. (1988), Vanderbilt University [2001]

BOBBY G. WEBB

Ed.D. (1997), The University of Memphis [2001]

TERESA WHELLEY

Ed.D. (1991), Peabody College Vanderbilt [2001]

R. KEITH WILLIAMS

Ed.D. (1993), Memphis State University [2001]

Program Admission for Master of Science (M.S.) and Doctor of Education (Ed.D.) in Leadership and Policy Studies.

Each applicant must submit a completed application packet to the University Graduate School that includes (1) a completed admissions application, (2) an official report of the Miller Analogy Test score (for master's students) or an official report of the Graduate Record Examination scores for doctoral students, and (3) official transcripts for all prior undergraduate and graduate courses. In addition, each applicant must submit the following to the Department of Leadership: (1) a professional resume, (2) three letters of professional recommendation, (3) a brief statement of professional goals, and if available, (4) a professional portfolio and other supporting materials. A personal interview preceded by a writing sample will be scheduled with each applicant (telephone interviews are an option for out-of-state candidates) and an admission decision will be made following the personal interview. The decision will be based on a holistic profile that includes, but is not limited to, information contained in the completed application packet described above and obtained during the personal interview. Interested applicants are encouraged to contact the departmental office to obtain admission forms and a more complete statement of admission guidelines and requirements for Tennessee administrative certification.

A. Master of Science (M.S.) Degree Program

1. The Department offers the Master of Science degree in Leadership and Policy Studies with concentration in (1) School Administration and Supervision and (2) Leadership.
2. Program Requirements
 - a. A minimum of 36 semester hours is required of each student.
 - b. Nine hours must be taken in the departmental core for this degree: LEAD 7000, LEAD 7100, and EDPR 7521 or 7523 and 27 other hours.
3. Concentrations and Courses:
 - a. School Administration and Supervision: A minimum of 27 hours specified by the Individual Program of Studies (IPS) developed in LDPS 7110, including LEAD 7060 and LEAD 7070.
 - b. Leadership: A minimum of 27 semester hours, including LEAD 7500; 3-4 additional departmental courses must be taken.

B. Doctor of Education (Ed.D.) Degree Program

1. The department offers concentrations in Community Education, Educational Leadership, and Policy Studies.
2. Program Requirements: A minimum of 54 semester hours beyond the master's degree is required of all students. Twelve hours must be taken in the departmental core: LEAD 8001, 8002, 8003, EDPR 8541 and 8542; 9 hours of dissertation; and 30 additional hours.
3. Concentrations and Courses:
 - a. Community Education: LEAD 8500, LDPS 8170, 8171, and 8181, and 18 hours approved by the student's advisory committee.
 - b. Educational Leadership: LDPS 8121, 8132, and 8181, and 21 hours approved by the student's advisory committee.
 - c. Policy Studies: LDPS 8305, 8310, and 8350, and 21 hours approved by the student's advisory committee.

II. Program Admission for Ed.D. in Higher Education and Adult Education

Each applicant must submit a completed application packet to the Graduate School that includes (1) a completed admissions application, (2) an official report of Graduate Record Examination (GRE) scores, and (3) official transcripts for all prior undergraduate and graduate courses. In addition, each applicant must submit the following to the Department of Leadership: (1) a professional resume, (2) a two-three page statement of academic and professional goals, and (3) three letters of recommendation. A personal interview will be scheduled with each applicant (telephone interviews are an option for out-of-state candidates) and an admission decision will be made following the personal interview. The decision will be based on a holistic profile that includes, but is not limited to, information contained in the completed application packet described above and obtained during the personal interview. Interested applicants are encouraged to contact the departmental office to obtain admission forms and a more completed statement of admission guidelines for this program.

Higher Education and Adult Education Major

1. The department offers the Doctor of Education degree in higher and adult education with concentrations in (1) higher education and (2) adult education.
2. Program Requirements
 - a. A minimum of 54 semester hours beyond the master's degree is required of each student.
 - b. Twenty one hours must be taken in the departmental core: LEAD 8001, 8002, 8003, 8500, HIAD 8403, and EDPR 8541 and 8542; 9 hours of dissertation; and 24 hours of electives.
3. Concentrations and courses:
 - a. Higher Education: HIAD 7410, 8401, 8410, 8420 or 8422, 8451, and 9 elective hours approved by the student's advisory committee.
 - b. Adult Education: HIAD 8510 and 21 hours approved by the student's advisory committee.

LEADERSHIP (LEAD)

6000. Foundational Studies: Education, Schooling and American Society. (3). (EDFD 7003-8003). Interdisciplinary study of educational policies and practices in American society; role and function of the school and the teacher; analysis of major problems and issues facing contemporary public education. (Fulfills foundations requirement for graduate students seeking teacher licensure.)

6400. Leadership and Reform in American Schools. (3). Concepts of leadership in the reform context of contemporary American social and educational policy; examination of major legal, political, economic, organizational, and philosophical issues; role of the teacher-leader.

7000. Introduction to Educational Leadership. (3). (EDAS 7100). Theory and practice of educational leadership; scope, task, areas, processes and procedures, organization structure, problems and issues, and types of personnel needed in the United States.

7004. Cultural Foundations of Education for Pupil Services. (3). (EDFD 7004). Analysis of philosophical, sociocultural, and historical dimensions of educational policies and practices relating to pupil personnel services in schools; distillation of important topics in educational foundations for specialized educational employees such as school attendance officers, school counselors, school psychologists, speech-language clinicians, and school social workers.

7050-59-8050-59. Special Topics in Leadership. (1-3). (EDAS 7712-22-8712-22). In-depth study of selected topics in educational leadership. May be repeated with change in topic.

†7061-8061. Practicum in Leadership. (1-3). (EDAS 7170-8170). Practical short-term work experiences in various settings appropriate to student's career needs. May be repeated for maximum of 9 credits.

†7070-8070. Culminating Experience. (1-6). (EDAS 7996). Capstone course using a problem-based, case study approach. **PREREQUISITE:** Must be taken in last semester or by permission of department chair.

The following courses consist of readings and reports to survey the literature on the topic. May be repeated with departmental permission.

7081-8081. Readings and Research in Higher and Adult Education. (1-3). (EDAS 7790-8790).

7082-8082. Readings and Research in Educational Leadership. (1-3). (EDAS 7710-8710).

7083-8083. Readings and Research in Educational Policy. (1-3). (EDFD 7008-8008).

7084-8084. Readings and Research in School and Community Relations. (1-3). (EDAS 7700-8700).

7085-8085. Readings and Research in Educational Supervision. (1-3). (EDAS 7750-8750).

7086-8086. Readings and Research in Educational Finance and Business Management. (1-3). (EDAS 7730-8730).

7087-8087. Readings and Research in Educational Personnel and Negotiations. (1-3). (EDAS 7760-8760).

7088-8088. Readings and Research in Educational Law. (1-3). (EDAS 7780-8780).

7089-8089. Readings and Research in Educational Plant and Transportation. (1-3). (EDAS 7740-8740).

7100. Education and Community. (3). (EDAS 7000). Educational processes and policies in formal and non-formal community settings; inter-relationships among such settings; field-based, students will assess particular educational policy and its implications within the community.

†7210-8210. Internship. (1-9). (EDAS 7171-8171). Work experiences under supervision of practicing professional. May be repeated for maximum of 9 credits. Prospective enrollees must meet departmental deadlines for application.

7500-8500. Adult Learning and Leadership. (3). (HIAD 7255-8255). Characteristics of adult learners; factors that affect learning, achievement, and motivation throughout the adult life-cycle; implications for educational leaders and human resource development.

†7996. Thesis (1-6). Prospectus must be approved by the faculty committee directing this research study. Application for writing thesis must be filed with the Director of Graduate Studies.

†8000. Specialist Culminating Experience. (1-6). Thesis, internship, field of study, or special project designed under direction of student's committee; capstone experience in Education Specialist program.

8001. Educational Leadership in Organizations. (3). (EDAS 8800). Basic theories of organization and administration, historical and contemporary foundations of theories; implications of current theories and practices for organizational and human resource development.

8002. American Society and Educational Policies. (3). (EDFD 7001-8001). Historical evolution of major social issues and resulting educational policies; normative and empirical bases of educational principles and practices; sociocultural contexts of contemporary problems and issues.

8003. Policy-Oriented Research. (3). Inquiry methods appropriate to educational policy research; empirico-inductive (grounded) and constructivist inquiry strategies emphasized. PREREQUISITES: LEAD 8001 & 8002, EDPR 8541 or equivalent, or permission of the instructor.

8140. Planning of Educational Change. (3). Characteristics of change in a variety of educational settings. Emphasis on planning theory, implementing and managing change processes; specific variables that impact on change efforts; analysis of planning and analysis tools; computer simulations and case studies.

†9000. Doctoral Dissertation. (1-9). (EDAS 9000).

HIGHER AND ADULT EDUCATION (HIAD)

†7060-8060. Internship in Higher and Adult Education. (1-6). Work experiences in higher education institution or in adult education settings under supervision of practicing professional and university supervisor. May be repeated for maximum of nine credits. PREREQUISITE: Permission of instructor.

7403-8403. Research in Higher and Adult Education. (3). Current topics, research problems, new studies, and needed inquiries in higher and adult education. PREREQUISITE: EDPR 7541 or equivalent.

7410. Overview of Higher Education. (3). (EDAS 7190-8190). Higher education in social and historical contexts; organization and administration of colleges and universities.

7411-8411. Community Colleges. (3). (EDAS 7191-8191). History, philosophy, and changing mission of the community college; focus on administration, faculty, staff, and students; curriculum and services; funding, public relations, and the presidency.

7430-8430. The Professoriate. (3). Faculties of U.S. colleges and universities, nature of their work in various types of institutions, aca-

demically reward system, and programs for continuing professional development.

7440-8440. Student Personnel Services in Higher Education. (3). (COUN 7613-8613). Activities, functions, relationships, and philosophy of student personnel services; historical developments and current trends in student personnel services in relation to changing concepts in higher education.

7441-8441. College Students and College Cultures. (3). (COUN 7672-8672). College student characteristics and differing life patterns in institutional perspective; variations in student and college cultures in types of institutions.

7450-8450. College and University Curriculum. (3). (HIAD 7200-8200). Structure, development, implementation, and assessment of curriculum in colleges and universities; historical and philosophical perspectives; major figures, emerging trends, and contemporary issues.

7452. Developmental Education (3). (HIAD 7204-8204). Developmental education programs in colleges and universities. Focus on policy, administration, and instruction.

7510-8510. Overview of Adult Education. (3). (HIAD 7250). Historical development of adult education; scope of field, including non-formal post-secondary education, and human resource development.

7512-8512. Developing and Funding Leadership Programs. (3). (HIAD 7256-8256). Adult leadership programs in various organizations, agencies, and groups as primary, supplementary, or complementary function; community relations and development in funding.

7530-8530. Continuing Professional Education. (3). Background and development of continuing education for professionals, including medicine, law, social work, psychology, dentistry, and education as well as other fields; examination of impetus and providers for such programs.

7541-8541. College Teaching. (3). (HIAD 7201-8201). Issues and trend in teaching and learning in higher education; analysis of various classroom teaching approaches designed for diverse student populations in higher education.

8401. Higher Education Administration. (3). (EDAS 7192-8192). Role, function, organization, and administration of colleges and universities; roles of presidents and other administrators; variations in academic and student life in higher education; relationships with various constituencies; problems of practice and power.

8405. Seminar in Higher and Adult Education. (3). (HIAD 7258-8258). Culminating experience for doctoral students; examination of current issues using cross-disciplinary perspectives derived from previous coursework.

8412. Historical and Policy Perspectives in Higher Education. (3). (EDFD 7002-8002). Historical development of higher education in the United States; current higher education policy issues in relation to development.

8420. Higher Education Law. (3). (EDAS 8380). Legal principles and significant legal constraints relating to institutions of higher education; emphasis on application of law to organizational structure, students, personnel, programs, property, and finance; analysis of current legal issues.

8422. Higher Education Finance. (3). (EDAS 8320). Financing of institutions in higher education; sources and methods of securing funds; development of programs; procedures for budget development and analysis; other financial and economic aspects of higher education administration; analysis of current problems related to higher education finance.

LEADERSHIP AND POLICY STUDIES (LDPS)

†7110. Leadership Exploration Seminar. (3). (EDAS 7400). Leadership and personal prospects for a career in educational administration; development of Individual Program of Studies (IPS).

7112-8112. Management of Educational Grants and Projects. (3). Planning and management of field-based educational projects, grant and consulting services. Emphasis on team and group efforts; computer applications in project management.

20. The Supervisory Process. (1-6). (EDAS 7050). Theory and methodology of educational supervision, with emphasis on instructional leadership; differences in roles for various supervisory personnel. project based.

21-8121. Personnel Administration. (3). (EDAS 7160-8160). Educational personnel administration and policy including: human resource management, staffing goals, policies, recruitment, induction, roles, and professional development.

22-8122. Collective Bargaining in Education. (1-3). (EDAS 8360). Analysis of bargaining in education, including history, issues, resource data, proposals, table tactics, contract language, impasse procedures, roles, and career opportunities in educational negotiations. **PREREQUISITE:** LDPS 7121 or permission of instructor.

23. Microcomputer Applications in Educational Administration. (1-3). (EDAS 7440-8440). Role of computer in educational administration and supervision; uses in budgeting, attendance, scheduling, student records, and inventory. **PREREQUISITE:** Permission of instructor.

24. School Business Management. (1-3). (EDAS 7130-8130). Business affairs of schools in accordance with laws and policies of local, state, and federal agencies; overview of legal and ethical standards; state budgeting and project management.

25-8132. School Finance. (3). Funding of public schools in the United States and other developed nations; analysis of various school funding models and related equity issues.

26-8134. Advanced Computer Applications in Educational Administration. (3). In-depth experiences with computer software specifically designed for management in education. Includes applications in areas of student and faculty record management, project management, student scheduling, transportation, food services, and facility utilization.

27-8140. Participatory Governance and Change. (3). Theory, research, policy, and practice in educational restructuring and participatory governance; strategies and procedures for implementation including role clarification, participatory decision making, group problem solving, communication, team building, evaluation, development of parent-community partnerships; mission setting, and ethical and moral principles of governance.

28. The Principalship. (1-6). (EDAS 7111-8111 & 7311-8311). Role of the principal in school site leadership focusing on instructional leadership and organization and administration of the school's resources; projects for elementary, middle, junior, and secondary principalship.

29. Educational Law. (3). (EDAS 7180-8180). Federal and state statutes and local regulations applicable to education; legal requirements and their implications for educational operation; legal research methods and case law.

30-8170. Community Education Administration. (3). (EDAS 7611-8111). Organizational aspects of community education programs, including administration and supervision of personnel and citizen-community participation in formulating, implementing, and evaluating community education programs.

31-8171. Continuing and Adult Education Administration. (3). (EDAS 7612-8612). Organization and administration of adult and continuing education, including adult remedial, vocational-technical, community outreach programs; administrative methods and materials appropriate to adult habits and needs; interpreting current legislation and research relating to adult and continuing education programs; planning, implementing and evaluating strategies.

32. Curriculum Planning in Adult Basic Education. (3). (HIAD 52-8252). Principles of curriculum building in application to adult basic education students.

33-8180. Politics and Power in Educational Leadership. (3). (EDAS 7010-8810). Field study of techniques and strategies for leaders in education to discover sources of community power influencing education policy; emphasis on superintendent, school board, and central office leaders.

34-8181. Policy Implementation in Educational Administration. (3). (EDAS 7811-8811). Development and implementation of administrative policy at the local, state, and national levels in relation to forces that shape thinking of policy-making bodies.

35-8305. Issues in Educational Policy. (3). Special issues of current interest related to American educational policies and practices.

36-8310. Philosophical Analysis and Educational Policy. (3). (EDFD 7022-8022). Exploration and use of philosophical analytical skills for assessing educational policies and practices.

37-8311. Issues in Philosophy of Education. (3). (EDFD 7021-8021). Critical examination of issues in the philosophy of education; history of issues and their effect on modern public schools.

38-8320. Urban Education: Historical and Contemporary Perspectives. (3). Sociological and cultural dimensions of urban society and education with emphasis on contemporary issues and recent policy developments.

39-8330. Race, Ethnicity, Gender, and American Education. (3). Historical and contemporary study of educational practices and policies related to various ethnic and racial groups, as well as women in the United States; various models of institutional and community forms of multicultural education.

40-8340. Comparative Education. (3). Cross-cultural and cross-national study of educational policies and practices.

41-8350. Policies and Politics of Contemporary American Education. (3). (EDFD 7033-8033). Conceptual and empirical analyses of political and social issues related to U.S. education.

42-8111. Educational Administration Performance Laboratory. (1-6). (EDAS 7370-8370). Laboratory experiences, including gaming and simulation, to illustrate complex organizations, information systems, network planning and projection systems, and leadership assessment.

43-8115. Educational Leadership Seminar. (3). (EDAS 7510-8510). Problems and issues derived from trends in contemporary culture that impact on educational leadership; emphasis on instructional leadership.

44-8133. Economics of Education. (3). (EDAS 8220). Economic aspects of education in the United States and other developed nations.

45-8155. Seminar in Education Law. (3). Analysis of current legislation and case law and its impact on education. **PREREQUISITE:** LDPS 7150 or permission of instructor.

+Grades of S, U, or IP will be given.

The Herff College of Engineering

RICHARD C. WARDER, Ph.D.
Dean

WILLIAM S. JANNA, Ph.D.
Associate Dean and Director of Graduate Studies

<http://bmc11.bme.memphis.edu/~neyens/frame/frame.html>

GRADUATE ACADEMIC PROGRAMS

Department	Major	Concentration	Degree Offered
Biomedical Engineering	Biomedical Engineering		Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) Note: These degrees are offered through a joint academic program with The University of Tennessee, Memphis School of Biomedical Engineering
Civil Engineering	Civil Engineering	(1) Environmental Engineering (2) Foundation Engineering (3) Structural Engineering (4) Transportation Engineering (5) Water Resources Engineering	Master of Science (M.S.) and Doctor of Philosophy (Ph.D.)
Electrical Engineering	Electrical Engineering	(1) Automatic Control Systems (2) Communications and Propagation Systems (3) Electro-Optical Systems (4) Engineering Computer Systems	Master of Science (M.S.) and Doctor of Philosophy (Ph.D.)
Engineering Technology	Engineering Technology	(1) Architectural (2) Electronics (3) Manufacturing	Master of Science (M.S.)
Mechanical Engineering	Mechanical Engineering	(1) Design and Mechanical (2) Energy Systems (3) Mechanical Systems (4) Power Systems	Master of Science (M.S.) and Doctor of Philosophy (Ph.D.)
Interdepartmental	Industrial and Systems Engineering		Master of Science (M.S.)

Individual program requirements described in the Graduate School Issue of the 1999-2001 Bulletin of The University of Memphis are subject to change. Please consult your department or the Office of the Graduate School for changes that may occur before publication of the next issue of this Bulletin; or consult the Graduate School website at: <http://www.people.memphis.edu/~gradsch> for the latest catalog updates

The Herff College of Engineering offers graduate programs at the master's and doctoral levels through its departments of Biomedical, Civil, Electrical, and Mechanical Engineering. In addition, a master's program in engineering technology is offered through the Department of Engineering Technology and an interdisciplinary master's program is offered in industrial and systems engineering. Students enrolled in the college at the master's level work toward the Master of Science (M.S.) degree. The doctoral program of the college leads to the degree of Doctor of Philosophy (Ph.D.) after successful completion of study and research in one of the following four areas: biomedical, civil, electrical, or mechanical engineering. Candidates for all degrees must follow a curriculum plan that has been approved at the departmental level and by the Director of Graduate Studies of the College.

Master of Science Degree Programs

The purpose of the master's degree programs is to provide opportunity for advanced study in various areas of engineering of current importance. Flexibility is provided in that students have the option of a thesis or non-thesis program.

Admission Requirements

Applicants will be considered for admission to the master's program based upon a common set of criteria. These are the applicant's attainment of an appropriate bachelor's degree, the

score earned on the Graduate Record Examination (GRE), and the undergraduate grade point average (GPA). The GPA used is either the cumulative or the last 60 semester hours of applicable courses earned toward a degree.

In addition to meeting the University minimum admission requirements, applicants must meet the following criteria established by this College.

The applicant must have:

1. appropriate bachelor's degree as determined by the admitting department.
2. an undergraduate GPA of at least 2.5.
3. an acceptable score on the verbal and quantitative portions of the GRE as established by their department or program of study.

An applicant who lacks an appropriate bachelor's degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must score at least 550 (210 computer-based) on the Test of English as a Foreign Language (TOEFL). Applicants are further advised that the admission requirements for the College are minimum requirements. Meeting minimum requirements does not guarantee admission into a specific departmental Master's program.

Retention Requirements

Refer to the individual program descriptions of each department.

Graduation Requirements

Refer to the individual program descriptions of each department.

Doctor of Philosophy Degree Program

The Herff College of Engineering offers a program leading to the degree of Doctor of Philosophy (Ph.D.) with a major in engineering and concentrations in biomedical, civil, electrical, or mechanical engineering. In addition the College offers a course of study leading to a degree of Doctor of Philosophy (Ph.D.) with a major in Biomedical Engineering through a joint academic program with The University of Tennessee, Memphis School of Biomedical Engineering.

Admission Requirements

Applicants will be considered for admission to the doctoral program based upon a common set of criteria. These are the applicant's educational background, Graduate Record Examination (GRE) score, grade point average (GPA), and letters of recommendation. The GPA used is either the cumulative or the last 60 semester hours of applicable courses earned toward a degree. Admission criteria also depend upon whether the applicant received a degree from an institution that is accredited at the undergraduate level by the Accrediting Board for Engineering and Technology (ABET).

In most cases, applicants will be considered for admission after completion of a master's degree. However, in certain cases, applicants will be considered for admission to the doctoral program after the attainment of a bachelor's degree. The following criteria will be applied according to the applicant's educational background as categorized below:

Master's Degree

1. Master's degree from a school with an ABET Accredited Undergraduate Program: An applicant who has a master's degree from an engineering program accredited at the undergraduate level by ABET will be considered for admission provided they have an acceptable score on the verbal and quantitative portions of the GRE as established by their department or program of study.
2. Master's degree from a school with a non-ABET Accredited Undergraduate Program or Bachelor's Degree field other than Engineering: Applicants in this category will be considered for admission provided the GRE Verbal score is at least 450 and the GRE Quantitative score is at least 600. In addition, the product of the graduate GPA and the GRE score must equal at least 3500, i.e., $[GPA \times GRE > 3500]$.

Bachelor's Degree

1. Bachelor's degree from an ABET Accredited Program: An applicant who has a bachelor's degree from an engineering program accredited at the undergraduate level by ABET will be considered for admission provided they have an acceptable score on the verbal and quantitative portions of the GRE as established by their department or program of study.
2. Bachelor's degree from a non-ABET Accredited program or Master's Degree field other than Engineering: Applicants in this category will be considered for admission provided they have an undergraduate GPA of at least 3.75, a GRE verbal score of at least 500, and a GRE quantitative score of at least 650.

Grade point averages above are based on a 4.00 grading system where A = 4.00. Students presenting transcripts using a different system will be held to similar standards.

In addition to the above requirements, all applicants must submit an application for admission to The University of Memphis along with three letters of recommendation from previous instructors attesting to the applicant's academic ability and potential for success in a doctoral program. Applicants whose native language is other than English must score at least 550 on the Test of English as a Foreign Language (TOEFL).

The above represent the minimum acceptable admission requirements. In addition to meeting the College minimum admission requirements, applicants must meet admission criteria established by their department or program of study.

Depending on the applicant's educational background, the advisory committee may require additional coursework to prepare the student for doctoral studies.

In unusual circumstances where the above admission requirements cannot be met, an applicant may seek exceptions by contacting the Director of Graduate Studies for the college.

Applicants are further advised that the College reserves the right to deny some applications for admissions because of limited faculty availability and physical facilities to accommodate student research interests.

Retention Requirements

A student will be retained continuously in the program until completion of the degree providing the following conditions are met:

All students will be required to maintain a grade point average (GPA) of at least 3.00. Should the student's GPA fall below that mark, a period of one semester or one full summer term will be allowed to correct the deficiency. Failure to regain the minimum 3.00 is considered sufficient reason for being dropped from the program. This period may, at the discretion of the student's advisory committee, be extended one additional semester or full summer term. If the GPA at the end of this extension is still below 3.00, the student will be dismissed from the program.

Accumulation of more than 7 semester hours of cumulative graduate coursework with a grade of 2.0 or lower will result in dismissal from the program, i.e., a student who accumulates 6 hours of graduate coursework with a grade of 2.0 or lower in a master's program is permitted only one additional hour with a grade of 2.0 or lower.

All students are required to complete a comprehensive examination with at least a minimum passing score on the written portion and a satisfactory performance on the oral portion of the exam. A second and final attempt to pass this examination may be granted by the student's advisory committee; failure will result in mandatory dismissal from the program.

Graduation Requirements

General Requirements: Each student must earn at least 90 semester hours beyond the bachelor's degree or 57 beyond the master's degree. Credit for the dissertation will range from 18 to 30 semester hours with the decision concerning the credit allowance being made by the student's advisory committee. Early in each student's program of study, a committee composed of graduate faculty in the college will be appointed by the Director of Graduate Studies upon recommendation of the departmental chair.

At least 66 of the 90 semester hours required, including dissertation and research credit, must be in engineering and at least 57 in biomedical, civil, electrical or mechanical engineering. No more than 15 semester hours credit of 6000 level courses will count toward the 90-hour Ph.D. degree.

Residency Requirements: A minimum of 24 semester hours must be earned while the student is in continuous residence. This may be done in two regular consecutive semesters. If the student is retained as a graduate assistant, the residency requirement may be met over a single continuous twelve-month period provided the student completes eighteen semester hours in two successive regular semesters. A student is not eligible to complete the residency requirement until a minimum of thirty semester hours of graduate study have been successfully completed.

Language Requirements: Students will be required to demonstrate foreign language skills sufficient to understand the major body of pertinent literature in the chosen field of study and to conduct the research necessary for completion of the dissertation or other research as may be required by the advisory committee.

Mathematics Requirements: Based on the qualifying examination required of all The University of Memphis doctoral students, the advisory committee may stipulate that appropriate mathematics courses be made a part of the student's program.

Examination Requirements: All students must take a qualifying examination in accordance with University policy outlined under Minimum Requirements for Doctoral Degrees in this catalog. This examination, which is intended to determine the student's mastery of broad fundamental concepts, will be given only after the student has completed at least thirty semester hours of graduate study. Hence, for students entering the program with a master's degree, the exam will occur shortly after the beginning of the program. The results will be used to prescribe the remainder of the student's academic program, and successful completion of the qualifying exam is required for admission to candidacy as a doctoral student.

The examination will generally be given in written form. However, the student's committee may require an oral session before making a final decision on the student's qualification to continue his/her studies.

After the final semester of coursework, the student will be required to successfully complete written and oral comprehensive examinations that will ascertain the student's mastery of the theoretical material that will underlie the dissertation topic.

At the completion of the dissertation, the student must defend the work before the advisory committee and other interested members of the university faculty who may care to question the results of the research.

Course Requirements: Nine semester hours of major core courses that integrate their doctoral experience are required of all doctoral students. This core is developed by the student's graduate advisory committee. Each concentration requires a minimum of 57 semester hours of coursework and research including the dissertation in the chosen field of study. Each student's program of study will be developed with the advisory committee.

Biomedical Engineering

VINCENT T. TURITTO, Sc.D., *Chair*
Room 330, Engineering Technology

MICHAEL R.T. YEN, Ph.D.,
Coordinator of Graduate Studies
Room 330, Engineering Technology
(901) 678-3733

E-Mail: vturitto@admin1.memphis.edu
www: <http://mecca.mecca.org/BME/bme-home.html>

MEMBERS

- JACK W. BUCHANAN, *Associate Professor*
M.S.E.E., M.D. (1975), University of Kentucky [2004]
FRANK J. CLAYDON, *Professor*
Ph.D. (1987), Duke University [2000]
A.U. (DAN) DANIELS, *Professor*
Ph.D. (1966), University of Utah [2004]
SEMAHAT S. DEMIR, *Assistant Professor*
Ph.D. (1975), Rice University [2004]
DENNIS DIANGELO, *Assistant Professor*
Ph.D. (1993), McMaster University [2004]
FRANK A. DIBIANCA, *Professor*
Ph.D. (1970), Carnegie Mellon University [2004]
EUGENE C. ECKSTEIN, *Professor*
Ph.D. (1975), Massachusetts Institute of Technology [2004]
LAWRENCE M. JORDAN, *Associate Professor*
Ph.D. (1964), Princeton University [2004]
MOHAMMAD F. KIANI, *Assistant Professor*
Ph.D. (1990), Louisiana Technical University [2004]
ROBERT A. MALKIN, *Assistant Professor*
Ph.D. (1993), Duke University [2001]
MICHAEL R. NEUMAN, *Professor*
Ph.D. (1963), M.D. (1974), Case Institute of Technology [2004]
LLOYD PARTRIDGE, *(Emeritus) Professor*
Ph.D. (1953), University of Michigan [2004]
JAE-YONG RHO, *Assistant Professor*
Ph.D. (1991), University of Texas at Dallas [2001]
STEVEN M. SLACK, *Assistant Professor*
Ph.D. (1989), University of Washington [2000]
VINCENT T. TURITTO, *Professor*
Sc.D. (1972), Columbia University [2002]
MICHAEL R.T. YEN, *Professor*
Ph.D. (1973), University of California at San Diego [2000]
HERBERT D. ZEMAN, *Associate Professor*
Ph.D. (1972), Stanford University [2004]

ASSOCIATE MEMBER

- DOUGLAS J. GOETZ, *Assistant Professor*
Ph.D. (1995), Cornell University [2002]

ADJUNCT MEMBERS

- JAMES C. EASON
Ph.D. (1995), Duke University [2000]
CONNIE L. HALL
Ph.D. (1995), University of Memphis
ERIC JOHNSON
M.D. (1986), Northeastern Ohio University [1999]
PAUL KOVACS
Ph.D. (1973), Northwestern University [2000]
BRADFORD D. PENDLEY
Ph.D. (1992), Cornell University [2001]
WILBURN E. REDDICK
Ph.D. (1991), Memphis State University [2000]
JEFFREY PAUL ROULEAU
Ph.D. (1996), University of Michigan [2000]
DANIEL B. SNYDER
Ph.D. (1993), University of Iowa [1998]
RICHARD W. TREHARNE
Ph.D. (1976), University of Pennsylvania [1997]
HAI H. TRIEU
Ph.D. (1995), Case Western Reserve University [2000]
WINFRED C. WANG, M.D. (1967), University of Chicago [2000]

The Department of Biomedical Engineering at The University of Memphis and the School of Biomedical Engineering at The University of Tennessee, Memphis, participate in the Joint Program in Biomedical Engineering. The Joint Program offers graduate programs leading to a Master of Science and a Doctor of Philosophy in Biomedical Engineering. Students may elect courses of study in the following areas: biomaterials, biomechanics, cardiopulmonary engineering, cell and tissue engineering, electrophysiology, medical imaging, and orthopedic and rehabilitation engineering.

Retention Policy

Students who have been admitted to the program on a conditional basis must make satisfactory progress toward completing all requirements of their conditional admission each semester of enrollment. Failure to make satisfactory progress may result in dismissal from the program.

All students will be required to maintain a grade point average (GPA) of at least 3.00. Should the student's GPA fall below 3.00, a period of one (1) term will be allowed to correct the deficiency. Failure to maintain the minimum GPA is considered sufficient cause for being dismissed from the program. If the student does not correct this deficiency within the one (1) term (not including summer), the student will be dismissed from the program.

Students will be permitted two (2) grades of 2.00 in courses taken at the two universities. Students will be evaluated by their committee at the end of the semester in which a third grade of 2.00 or lower is earned for possible dismissal from the program.

All Ph.D. students are required to complete a comprehensive examination with at least a minimum passing score on the written portion and a satisfactory performance on the oral portion of the exam. A second and final attempt to pass this examination may be granted by the student's advisor committee; failure to pass this exam will result in dismissal from the program.

M.S. Degree Program

Admission Requirements

In addition to meeting the minimum admission requirements of the two universities and the Herff College of Engineering, applicants must meet the following criteria established by the Joint Program.

The applicant must have:

1. an appropriate bachelor's degree (biomedical, chemical, electrical, mechanical, or others as defined by the Joint Program);
2. an undergraduate GPA of at least 3.00;
3. a score of at least 1500 on the verbal, quantitative, and analytical portions of the GRE.

In addition to meeting the College minimum admission requirements, applicants must meet admission criteria established by their department of study. These are the minimal program admission requirements. Meeting minimum requirements does not guarantee admission into the Master's Degree Program. In addition to the above requirements, applicants whose native language is other than English must score at least 550 (or 210 computer-based) on the Test of English as a Foreign Language (TOEFL).

Graduation Requirements

Students may elect to graduate from the Joint Program with a Master of Science in Biomedical Engineering through either a thesis or a non-thesis option.

1. **Thesis Option:** Students must complete 30 credit hours, 21 hours of which must be 7000-level or higher course work (or The University of Tennessee equivalent), including BIOM 7209, 6 credits in the life sciences area, 6 credits in mathematics and its applications, and 6 credits of thesis. Oral defense of the thesis to their graduate committee and an oral exam are required.
2. **Non-Thesis Option:** Students will be required to complete 33 credit hours, 24 hours of which must be 7000-level or higher course work (or The University of Tennessee equivalent), including BIOM 7209, 6 credits in the life sciences area, 6 credits in mathematics and its applications, and a 3 credit-hour project course. Oral defense of the project to their graduate committee and a written comprehensive exam are required.

Ph.D. Degree Program

Admission Requirements

In most cases applicants will be considered for admission after completion of the master's degree. For applicants with a master's degree, a graduate GPA of at least 3.3, and a score of at least 1650 on the verbal, quantitative, and analytical portions of the GRE is necessary.

In selected cases of excellence, admission to the doctoral program after completion of the bachelor's degree will be considered. For such applicants, an undergraduate GPA of at least 3.5 and a score of at least 1900 on the verbal, quantitative, and analytical portions of the GRE is required.

These are the minimal program requirements. Meeting minimum requirements does not guarantee admission into the doctoral degree program. In addition to the above requirements, applicants whose native language is other than English must score at least 550 (or 210 computer-based) on the Test of English as a Foreign Language (TOEFL).

Applicants are further advised that the department reserves the right to deny some applications for admission because of limited faculty availability or physical facilities to accommodate the applicant's research interests. In unusual circumstances where the above admission requirements cannot be met, an applicant may seek exceptions by contacting the Coordinator of the Joint Graduate Program.

Graduation Requirements

1. **General Requirements:** Students graduating with a Doctor of Philosophy in Biomedical Engineering must complete 90 hours of course work beyond the bachelor's degree or 57 beyond the master's degree. Of the total hours of course work, BIOM 7/8209 and BIOM 7/8105 or their equivalents are required and at least 12 must be in the life sciences and 12 in mathematics. Credit for the dissertation will be 24-30 semester hours. At least 24 credit hours are required; up to 6 additional hours may be permitted as determined by the student's advisor committee. Early in each student's program of study, this committee (composed of graduate faculty) will be appointed by the Coordinator of the Joint Program.
2. **Residency, Language, and Examination Requirements:** These requirements parallel those described earlier for the doctoral program in the Herff College of Engineering.

BIOMEDICAL ENGINEERING (BIOM)

6900-6909. Special Topics in Biomedical Engineering I. (1-3). This introduction and application to aspects of the entire body, provides engineers and physical scientists with an understanding of aspects of the chemical, physical, and mechanical basis of cell shape, function, and motility. Integrated treatment of topics in cellular biochemistry, protein synthesis, energy releasing pathways, and membrane biophysics.

7004-8004. Life Sciences for Biomedical Engineering I. (3). This introduction and application to aspects of the entire body, provides engineers and physical scientists with an understanding of aspects of the chemical, physical, and mechanical basis of cell shape, function, and motility. Integrated treatment of topics in cellular biochemistry, protein synthesis, energy releasing pathways, and membrane biophysics.

7005-8005. Life Sciences for Biomedical Engineering II. (3). Continuation of 7004-8004. An introduction to various aspects of chemical, physical, and mechanical bases of cell shape, function, and motility with an emphasis on and connections to applications in biomedical engineering. The course will integrate topics in cellular biochemistry, protein synthesis, energy-releasing pathways, and membrane biophysics.

7103-8103. Theory of Continuous Media. (3). Analysis of stress and deformation at a point; derivation of the fundamental equations in tensor notation by application of the basic laws of conservation of mass, energy, and momentum in mechanics and thermodynamics.

7108-8108. Numerical Methods. (3). Numerical differentiation and integration, computer solutions of linear equations, multiparameter minimization, Monte Carlo methods, and solution of ordinary and partial differential equations.

7110-8110. Biostatistics. (3). Introduction to statistical techniques used for analysis of basic and clinical biomedical engineering data; sampling theory, hypothesis testing, ANOVA, and nonparametric techniques.

†7114-8114. Biomedical Engineering Seminar. (3). Weekly presentations of biomedical engineering research by visiting faculty and invited speakers; weekly presentations by graduate students and discussions of graduate student research in journal clubs; required of all full-time graduate students.

7115-8115. Computer Applications in Biomedical Engineering. (3). Computer technology with medical applications; basic physiology and biomedical instrument devices and systems.

7203-8203. Bioelectricity. (3). Introduction to electrical propagation through human tissue; membrane biophysics, action potentials, sub-threshold stimuli, electrophysiology of heart, and neuromuscular junction.

7209-8209. Biomedical Measurements and Instrumentation. (3). Measurement techniques applicable in biomedical engineering; data acquisition system, mechanical instrumentation, interface systems, signal analyses; biocompatibility requirements.

7210-8210. Nervous System Function. (3). The function of the nervous system with specific emphasis on applications in biomedical engineering. Topics include information handling, effector mechanisms, and control systems.

7215-8215. Advanced Cardiac Electrophysiology. (3). Covers individual channels and bulk transmembrane current flow; passive property modulation; reentrant and automatic arrhythmias; arrhythmogenesis in the acute, subacute and late phase of ischemia

and infarction. Students will be expected to prepare and present recent research results.

7220-8220. Advanced Instrumentation and Measurements in Electrophysiology. (3). Advanced instrumentation and measurement techniques in electrophysiology; theory and application of non-invasive measurements of temperature, respiration, and the electrocardiogram; invasive techniques including pacing, defibrillation, and arrhythmia induction and termination.

7310-8310. Tissue Mechanics. (3). Introduction to physiological systems with emphasis on structure and function of tissue and organs; application of continuum mechanics to understanding of tissue and organ behavior at microscopic and macroscopic levels; design analyses of surgical procedures and prosthetic devices.

7313-8313. Advanced Biomechanics. (3). Modern development of biomechanics at advanced mathematical level; dynamics of the lung, blood flow, microcirculation, and muscle mechanics.

7331-8331. Advances in Orthopedic Biomechanics. (3). The course consists of a sequence of lectures devoted to special topics including: biomechanical analysis and function of upper extremity, lower extremity, and spine joint systems of the human body; and fracture healing and bone remodeling, bone regeneration, function of cartilage, and biomechanics of tendon, ligament, and meniscus.

7408-8408. Biochemical Engineering. (3). Application of engineering principles to effect biochemical transformation through use of living cells, subcellular organelles or enzymes; overview of biotechnology, bioreactor design; cell energetics, enzyme kinetics, Michaelis-Menten calculations, immobilized cells; biosensors and process control.

7409-8409. Cardiovascular Fluid Dynamics. (3). Mechanics of blood circulation, fluid mechanics of the heart, blood flow in arteries, unsteady flow in veins, current concepts in circulatory assist devices and other selected topics.

7423-8423. Biorheology for Biomedical Engineers. (3). Application of biorheology in biomedical engineering and medicine; deformation and flow of biological materials, tube flow and viscous shear in blood, blood elements and plasma, viscoelastic properties of lung, muscle, and other tissues.

7425-8425. Artificial Organs. (3). Basic concepts of blood contacting devices used as replacement for natural organs. Artificial kidney, lung, heart-lung bypass, total hearts, pancreas.

7430-8430. Biomaterials. (3). Introduction to materials used in biomedical engineering; biocompatibility and uses of implantable materials such as ceramics, polyethylene, metals, composites, and other materials.

7432-8432. Advanced Biomaterials. (3). Materials used in biomedical applications in relationship to corrosion, crack propagation, creep, and related topic; tissue ingrowth into materials.

7452-8452. Fluid Mechanics for Biomedical Engineers. (3). Elements of hydrodynamics with applications to flow in biomedical systems; basic principles of continuity and Navier-Stokes equations; ideal and viscous flow, boundary layer solutions, fluid wave behavior; viscosity of plasma, blood, and viscoelastic fluids, principles of viscometry.

7454-8454. Mass Transport for Biomedical Engineers. (3). Basic principles of mass transport applied to biological systems with particular emphasis on blood surface interactions, especially related to blood coagulation and thrombosis.

7460-8460. Cell Adhesion. (3). Biophysical and biochemical principles governing cell adhesion; integrin and selectin cell adhesion molecules; interactions between leukocytes and tumor cells with endothelium; measurement and modeling of cell adhesion phenomena.

7480-8480. Experimental Techniques in Cell and Tissue Engineering. (3). Theory and application of basic biochemical and biophysical measurements and instrumentation; topics include light spectroscopy, centrifugation, radiochemical techniques, protein purification, chromatography, electrophoresis, flow cytometry, and immunoblotting.

7515-8515. Biomedical Engineering Design. (3). Engineering design principles pertaining to biomedical engineering; wave propagation in tissue, flow in cardiovascular systems; electrocardiographs, heart valves, mechanical circulation devices, high frequency ventilation, etc.

7712-8712. Biomedical Engineering Laboratory. (3). Demonstration and experiments on basic concepts of biomedical engineering design through surgical procedures involving experimental models.

7718-8718. Research Techniques. (3, 6). Presentation of research techniques through organized lectures, special assignments, and selected research topics.

7721-8721. Research Internship for Biomedical Engineers. (3). Independent study for biomedical engineering students in the master program; investigation in at least one area selected from a master list and approved by the student's advisor.

7722-8722. Advanced Research Internship. (6). Independent research problems for biomedical engineering students; investigations in three different research areas selected from a master list and approved by the student's graduate committee.

7900-7920 - 8900-8920. Special Topics in Biomedical Engineering. (1-3). Topics are varied and announced in *Schedule of Classes*.

7991-8991. Project I. (1-3). Independent study in Biomedical Engineering on topic selected in conjunction with instructor. Oral and written reports required. May be used for curricular training as a part of an internship program.

7992-8992. Project II. (1-3). Independent investigation of problem selected in consultation with instructor. Oral and written report required. May be used for curricular training as a part of an internship program.

†7996. Master's Thesis. (1-12)

†9000. Doctorate Dissertation. (1-12).

†Grades of S, U, or IP will be given.

The courses listed below are taught at the University of Tennessee Memphis.

7101-8101. Biomedical Engineering Analysis I. (3). Analytical and numerical solution techniques used in analysis of biomedical engineering problems- introduction to software packages PV-Wave and Math CAD for experience with modern problem-solving methods.

7102-8102. Biomedical Engineering Analysis II. (3). Continuation of 7101-8101. Advanced techniques for solution of complex problem related to biomedical engineering phenomena; emphasis on use of software packages PV-Wave and Math CAD for analysis of problems arising in biomedical engineering research.

7105-8105. Control Systems. (3). Modeling, representation, and analysis of physiological control systems, using control theory technique modeling and control problems in cellular and general physiology. Introduces basic concepts of control systems (transfer functions, feedback control system using root locus, frequency response methods); discusses various biological systems and their natural and drive control mechanisms.

7107-8107. Membrane Modeling. (3). Modeling, representation, and analysis of various cellular systems with applications in smooth skeletal, and cardiac cells, and neurons. Introduces basic concepts mathematical modeling along with numerical methods; and discuss various biological systems and models of electrical and chemical activities within and between these biological systems (i.e. cells).

7116-8116. Mathematical Modeling of Biological Phenomena. (3). Applications of mathematics to the understanding of biological systems in biomedical engineering and modern biology; basic concepts mathematical modeling development and validation; realistic examples of mathematical models in biology.

7303-8303. Movement, Joint, and Implant Mechanics. (3). The course consists of the following sections; muscle and bone anthropometric kinetics: the link model, mechanical work, energy, and power; kinematics and dynamics of rigid bodies; and the development of mechanically equivalent models of the human musculoskeletal system.

7501-8501. Medical Imaging I. (3). Introduction to theory and physics of medical imaging, basic elements of interactions of radiation with matter; analysis of nuclear magnetic resonance and ultrasound imaging techniques.

7502-8502. Medical Imaging II. (3). Continuation of 7501-8501. Advanced methods in medical imaging; theory and application of medical

etic resonance, ultrasonic, nuclear medicine, and X-ray imaging techniques for biomedical engineers.

503-8503. Digital Radiography. (3). Principles of digital radiographic systems emphasizing kinesthetic charge detector; physical and electronic mechanisms for collection of ionic signals that form the radiographic image; analysis of data acquisition and image quality.

506-8506. Advanced Imaging Techniques. (3). In-depth treatment of advanced techniques of image processing and system performance analysis applied to medical image systems. Selected topics may include systematic corrections for digital image acquisition, image reconstruction in the presence of noise, feature enhancement techniques, computed tomography algorithms, and analysis of system/reader performance in diagnostic imaging.

601-8601. Principles in Biomechanics and Rehabilitative Engineering. (3). Solid mechanics, kinematics, dynamics and mechanics of materials with applications to human musculoskeletal system; assessment of joint function and movement in normal and pathological conditions.

605-8605. Product Design for People with Disabilities. (3). Principles and methods of engineering design applied to products which meet functional needs of people with motor and sensory disabilities; students will work together to design and build a working prototype of a new device which solves a problem without current solution.

Civil Engineering

MARTIN E. LIPINSKI, Ph.D., *Chair*

LARRY W. MOORE, Ph.D.

Coordinator of Graduate Studies
Room 104A, Engineering Building
(901) 678-2746

E-mail: lwmoore@memphis.edu
http://www.ce.memphis.edu

MEMBERS

HARLES CAMP, *Associate Professor*

Ph.D. (1987), Oklahoma State University [2005]

AMIE W. HURLEY, JR., *Professor*

Ph.D. (1975), University of Florida [2005]

HOWARD H.M. HWANG, *Professor*

D.Eng. Science (1976), Columbia University [2000]

MARTIN EDWARD LIPINSKI, *Professor*

Ph.D. (1972), University of Illinois [2000]

ROGER W. MEIER, *Assistant Professor*

(Ph.D. (1995), Georgia Technological University [2004])

LARRY W. MOORE, *Professor*

Ph.D. (1983), Mississippi State University [2000]

HAHRAM PEZESHK, *Professor*

Ph.D. (1989), University of Illinois [2005]

WILLIAM T. SEGUI, *Associate Professor*

Ph.D. (1971), University of South Carolina [2000]

ROGER H. SMITH, *Associate Professor*

Ph.D. (1978), University of Missouri-Rolla [2000]

ADJUNCT MEMBERS

OTTO J. HELWEG

Ph.D. (1975) Colorado State University [2001]

JOHN WARREN SMITH

Ph.D. (1968), University of Missouri-Rolla [2000]

The department of Civil Engineering offers a graduate program leading to a Master of Science degree with a major in Civil Engineering (concentrations in Environmental Engineering, Foundation Engineering, Structural Engineering, Transportation Engineering, and Water Resources Engineering) and a Ph.D. degree with a major in Engineering (concentration in Civil Engineering).

M.S. Degree Program

A. Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

B. Program Prerequisites

Bachelor of Science Degree

C. Program Requirements

1. Non-thesis option: 33 credit hours as required below
2. Thesis option: 30 credit hours as required below
3. 24 hours of Civil Engineering course work at the 7000 level. This total includes thesis if that option is selected.
4. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering.
5. Students electing the non-thesis option must take CIVL 7001, 7012, and 7993. In addition, non-thesis students must pass a written Civil Engineering Master of Science Examination. This examination will be offered in November and April of each year. This exam will be taken in the student's final semester.
6. Concentrations:
Concentration may be made by selection of courses from the following five areas: (No special concentration is required.)
 - a. Environmental Engineering
6140, 6143, 6144, 7140, 7141, 7142, 7143, 7144, 7145, 7146, 7147, 7185, 7195, 7196, 7991, 7996.
 - b. Foundation Engineering
6136, 7132, 7133, 7134, 7182, 7991, 7996, 7130.
 - c. Structural Engineering
6131, 6136, 7001, 7111, 7115, 7116, 7117, 7118, 7119, 7112, 7113, 7991, 7996.
 - d. Transportation Engineering
6162, 6163, 6164, 7001, 7162, 7163, 7164, 7165, 7166, 7168, 7169, 7991, 7996.
 - e. Water Resources Engineering
6180, 6190, 7133, 7153, 7163, 7181, 7182, 7185, 7191, 7192, 7193, 7194, 7195, 7196, 7197, 7991, 7996.

D. Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all Civil Engineering course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted on probation must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed from the program at the end of the semester in which a third grade of 2.00 or lower is earned.
5. A student who has been dropped from the graduate program in the Department of Civil Engineering will be denied permission to enroll in Civil Engineering courses in semesters subsequent to dismissal from the department.

III. Ph.D. Degree Program

See the beginning of the College section for admission, retention, and graduation requirements.

CIVIL ENGINEERING (CIVL)

6112. Deterministic Systems Engineering. (3). Employment of optimization techniques to well-defined civil engineering problems; emphasis on development and application of mathematical models. Topics include transportation and resource allocation problems. **PREREQUISITE:** CIVL 3101.

6122. Structural Analysis II. (3). Analytical and numerical solutions for statically indeterminate structures. Three lecture hour a week. **PREREQUISITES:** CIVL 3121, 3322.

6131. Intermediate Steel Design. (3). Design of plate girders and composite beams; moment connections; building design. **PREREQUISITE:** CIVL 3131.

6136. Intermediate Reinforced Concrete Design. (3). Design of two-way slab systems; column design including length effects; integrated building design using current code provisions. **PREREQUISITES:** CIVL 4122, 4135.

6140. Environmental Engineering Design. (3). Detailed design of one component of an environmental engineering system with appropriate consideration of interactions with other components; design standards, procedures, and legal constraints emphasized. Three lecture hours per week. PREREQUISITE: Consent of instructor.

6143. Physical-Chemical Treatment. (3). Basic physical chemical treatment concepts for water and wastewater will be presented with laboratory demonstration of unit operations and processes as well as derivation of design data through laboratory studies. Two lecture, three laboratory hours per week. PREREQUISITE: CIVL 3140.

6144. Biological Wastewater Treatment. (3). Basic biological treatment concepts for wastewater with laboratory demonstration of unit operations as well as derivation of design data through laboratory studies. Two lecture, three laboratory hours per week. PREREQUISITE: CIVL 3140.

6162. Traffic Engineering. (3). Traits and behavior patterns of road users and their vehicles. Includes traffic signs and signals, pavement markings, hazard delineation, capacity, accidents and parking analysis. PREREQUISITE: CIVL 3161.

6163. Airport Planning and Design. (3). Aeronautical demand and air traffic control; airport and runway configuration; capacity and delay analysis; geometric design of runways and taxiways; airport access and parking; ground movements and baggage movements. PREREQUISITE: CIVL 3161.

6164. Route Location and Design. (3). Elements of route location and design- emphasis on horizontal and vertical alignment, curvature, gradient and sight distance. Two lecture, three laboratory hours per week. PREREQUISITES: CIVL 1101, 3161.

6180. Advanced Hydrology and Hydraulics. (3). Current methods and techniques used in hydrologic and hydraulic analysis for the design of water resources projects; watershed hydrology, groundwater hydrology, flood frequency analysis, flood plain management, hydraulic structures, hydraulic machinery, and project feasibility. Three lecture hours per week. PREREQUISITE: CIVL 3181.

6190. Water Resources Planning and Design. (3). Application of engineering principles to planning and design of multipurpose water resources projects, various physical components and appurtenances of water resources projects and economic, financial, and social feasibility of various purposes. Three lecture hours per week. PREREQUISITES: CIVL 3181, 4111 or permission of instructor.

7001-8001. Engineering Analysis. (3). Numerical integration of linear and non-linear differential equations; finite difference methods; systems of linear algebraic equations; applications to engineering problems. PREREQUISITE: Permission of instructor.

7012-8012. Probabilistic Methods in Engineering. (3). Concepts and methods of probability and statistics that are essential for modeling engineering problems under conditions of uncertainty. Application to practical problems. PREREQUISITE: Permission of instructor.

7111-8111. Computational Mechanics. (3). Advanced mathematical modeling techniques using finite difference, finite element, and boundary element formulations to solve civil engineering problems. PREREQUISITE: Permission of instructor.

7112-8112. Plastic Design of Steel Structures. (3). (7122). Plastic analysis and design of steel structures; application to multi-story buildings. PREREQUISITE: Permission of instructor.

7113-8113. Prestressed Concrete Design. (3). (7121). Theory of prestressing. Design of prestressed concrete beams, slabs and box girders. Statically determinate and indeterminate structures. PREREQUISITE: Permission of instructor.

7114-8114. Elastic Stability. (3). Classical theory of buckling of rods, plates, and shells. PREREQUISITE: Permission of instructor.

7115-8115. Plate and Shell Structures. (3). (Same as MECH 7115) Analysis of rectangular and circular flat plates; large deflections of plates; variational methods; analysis of shells as surfaces of revolution under symmetric and unsymmetric loading. PREREQUISITE: Permission of instructor.

7116-8116. Structural Dynamics. (3). Dynamic analysis of single-degree-of-freedom structures; response to general dynamic loading; modal analysis of multistory shear buildings; introduction to nonlinear and random vibration. PREREQUISITE: Permission of instructor.

7117-8117. Finite Element Methods in Structural Mechanics. (3). Structural idealization, stiffness properties of elements, structural analysis of element assemblage. Plane stress and strain problems. Applications to problems of plates and shells. Computer solution of large systems. PREREQUISITE: Permission of instructor.

7118-8118. Design of Structural Systems. (3). Integrated design of buildings or bridges; application of current codes and specifications. PREREQUISITE: Permission of instructor.

7119-8119. Earthquake Resistant Design. (3). Earthquake strong motion; response spectrum analysis; seismic design of buildings. PREREQUISITE: Permission of instructor.

7121-8121. Computational Structural Dynamics. (3). Advanced applications of numerical methods and finite element analyses to structural dynamics problems; use of commercially available FEA codes to solve practical problems. PREREQUISITES: CIVL 7116-8116, 7117-8117.

7123-8123. Seismic Risk Assessment of Structures. (3). Evaluation of seismic hazard and site-specific ground motion for critical facilities; analysis of structural reliability and seismic risk. PREREQUISITE: Permission of instructor.

7130-8130. Foundation Analysis. (3). Analysis of footing, raft, pile and pier foundations; analysis of earth pressures on retaining walls, rigid bulkheads, flexible bulkheads, and braced excavations.

7132-8132. Advanced Soil Mechanics. (3). Stresses in soil masses; porewater stresses; consolidation and settlement; shear strength; applications to problem solution.

7133-8133. Earth Structures. (3). Analysis, design and construction of earth dams, levees, embankments and slopes; soil stabilization; seepage, drainage, and flow nets. PREREQUISITE: CIVL 7132-8132.

7134-8134. Foundation Engineering. (3). Critical study of foundation design of completed projects using case records; emphasis on failure and performance records. PREREQUISITE: CIVL 7130-8130, 7132-8132.

7135-8135. Soil Dynamics. (3). Theory and measurements of dynamic properties of soils and their applications in seismic hazards assessments, earthquake engineering design, and geophysics studies. PREREQUISITE: Permission of instructor.

7136-8136. Dynamic Testing of Materials. (3). Theory of and actual laboratory and field measurements of dynamic properties of soils and various construction materials for dynamic analysis and design.

7140-8140. Environmental Law & Regulations. (3). In-depth analysis of the historical and current environmental laws and regulations. Development and enactment of environmental laws and associated regulations will be explored as well as the interpretation of the laws by engineers and citizens. PREREQUISITE: Permission of instructor.

7141-8141. Water Treatment Plant Design. (3). Design of a water treatment plant; application of fundamental water treatment theory; evaluation of alternatives; selection and design of optimum alternative. PREREQUISITE: CIVL 6143 or permission of instructor.

7142-8142. Wastewater Treatment Plant Design. (3). Design of wastewater treatment plant; application of fundamental wastewater treatment theory; evaluation of alternative; selection and design of optimum alternative. PREREQUISITE: CIVL 6144 or permission of instructor.

7143-8143. Solid Waste Management. (3). Systems approach to solid waste generation, characterization, collection, transportation, disposal emphasizing both domestic and industrial wastes. PREREQUISITE: Permission of instructor.

7144-8144. Residuals Management and Resource Recovery/Recycling. (3). Systems approach to unique solid wastes (inflammable industrial, sewage sludge, etc.), as well as resource recovery and energy conversion as disposal practices. PREREQUISITE: Permission of instructor.

7145-8145. Advanced Biological Treatment. (3). In-depth study of biokinetics applicable to waste management; model evaluations; hazardous and non-hazardous wastes. PREREQUISITE: CIVL 6144.

7146-8146. Advanced Physical/Chemical Treatment. (3). An independent analysis of theory and practice of advanced water and wastewater treatment processes; emphasis on adsorption processes, ion exchange membrane processes, chemical oxidation, land treatment, nutrient

removal, and sludge treatment and disposal. PREREQUISITE: CIVL 6143 or permission of instructor.

7147-8147. Hazardous Waste Management. (3). Design of hazardous waste management systems; application of current design theories; review of regulatory requirements. PREREQUISITE: Permission of instructor.

7153-8153. Water Quality Modeling of Streams. (3). Water quality model conceptualization; emphasis on geometric representation, temporal variation, hydrodynamic considerations, and solution techniques. Water quality models incorporating physical, biological, and chemical processes; verification of water quality models; case histories. PREREQUISITE: Permission of instructor.

7154-8154. Industrial Wastewater Treatment. (3). In-plant control measures and end-of-pipe treatment technologies for reducing conventional and toxic industrial pollutant discharges; emphasis on water conservation, wastewater recycle/reuse, and optimum treatment strategies for waste streams from major industries. PREREQUISITE: Permission of instructor.

7162-8162. Transportation Systems Evaluation. (3). Transportation problems, goals, and objectives; evaluation and decision-making techniques; measurement of variables and intangibles in transportation decisions, cost allocation and benefit transfer, risk and uncertainty; financing and implementation; differential impacts of transportation improvements. PREREQUISITE: Permission of instructor.

7163-8163. Transportation on Inland Waterways. (3). Inland waterways (IWW) freight characteristics and floating equipment; extent and nature of IWW in U.S.; terminal sites and harbors, intermodal and ocean freight interrelationships; materials handling at terminals; terminal types and geometrics; problems and solutions. PREREQUISITE: Permission of instructor.

7164-8164. Urban Transportation Engineering. (3). A review of the transportation problem as it relates to the development patterns in American cities. The theory and application to engineering and socioeconomic factors directed toward the formulation of models for conducting transportation studies. PREREQUISITE: Permission of the instructor.

7165-8165. Geometric Design of Transportation Systems. (3). Design of streets and highways with emphasis on the factors and features controlling safe and efficient vehicle operation. Applications of design concepts to urban and rural systems, intersections, interchanges, safety appurtenances, and parking facilities. PREREQUISITE: CIVL 6164 or permission of instructor.

7166-8166. Design of Highway and Airport Pavements. (3). Design practices, materials and testing of flexible and rigid pavements. PREREQUISITE: Permission of instructor.

7168-8168. Traffic Engineering Operations. (3). Theory of traffic control: traffic laws and ordinances; application of traffic control devices; analysis and design of traffic signal systems, parking control and design pedestrian control; one-way and unbalanced lane operation, roadway illumination; selected operational problems. PREREQUISITES: CIVL 6162 or permission of instructor.

7169-8169. Mass Transit Systems. (3). Operational analysis of equipment and facility design and service characteristics of urban mass transit systems; analysis of capacity, speed, accessibility, terminal operations; study of financing, decision-making, administration and marketing policies and practices, trends in future transit technology. PREREQUISITE: Permission of instructor.

7181-8181. Statistical Hydrologic Modeling. (3). Current statistical techniques used in stochastic, deterministic, and parametric hydrologic models; emphasis on probability and frequency analysis; optimization methods; time series analysis and synthesis; sensitivity analysis; computer applications. PREREQUISITE: Permission of instructor.

7182-8182. Engineering Aspects of Sedimentation and Erosion. (3). Soil erosion and sedimentation process within a watershed; emphasis on means of controlling erosion and sediment from land-disturbing activities. PREREQUISITE: Permission of instructor.

7185-8185. Hydraulics of Open Channels. (3). (7148). Phenomena accompanying flow of water in open channels, uniform and varied flow, critical conditions, backwater curves or water surface profiles, hydraulic jumps, hydraulic drops and various design application. PREREQUISITE: Permission of instructor.

7191-8191. Computer Application in Water Resources. (3). Application of current computer programs used in hydrology, hydraulics,

sediment transport, groundwater flow, water quality, and water resources engineering and planning. Permission of instructor.

7192-8192. River Engineering. (3). River mechanics and principles governing river regulation and improvement, with emphasis on navigation and flood control structures. PREREQUISITE: CIVL 7185-8185 or permission of instructor.

7193-8193. Hydraulics of Sediment Transport in Rivers and Lakes. (3). River mechanics and stream morphology governing hydraulics of bed loads and sediment transport in alluvial river system; current methods for conducting sediment investigation; engineering analysis procedures for design of stable channel system. PREREQUISITE: Permission of instructor.

7194-8194. Computation River Hydraulics. (3). (7149). Advanced studies in computational open channel hydraulics; major emphasis on unsteady flow simulation in natural rivers, dynamic flood routing, sediment transport and transport of pollutants. PREREQUISITES: CIVL 7001-8001 and CIVL 7185-8185, or permission of instructor.

7195-8195. Groundwater Hydraulics. (3). Theory of ground water flow; computer simulation models; well hydraulics, design and construction, pump selection; computer methods in well testing and design. Ground water contribution to water demand and conjunctive use.

7196-8196. Urban Drainage. (3). Flooding and pollution problems associated with urban areas; application of planning, analysis, and hydraulic design techniques for storm water and erosion control measures. PREREQUISITE: CIVL 7185-8185 or permission of instructor.

7197-8197. Ground Water Quality Control. (3). Analysis of ground water quality and pollution problems; techniques for computer modeling, monitoring, and site remediation of ground water problems. PREREQUISITE: Permission of instructor. CIVL 6180 recommended.

7900-10-8900-10. Special Topics in Civil Engineering. (1-3). Topics are varied and announced in *Schedule of Classes*.

7991-8991. Projects. (3). Independent investigation of problem selected in consultation with instructor; report required. Nine laboratory hours per week.

7993-8993. Project and Report. (3). Independent study for students in non-thesis option program. Students demonstrate ability to pursue, complete, and report on project related to Civil Engineering practice. Written and oral report prepared for acceptance by faculty committee. Nine laboratory hours per week.

†7996. Thesis. (1, 3, or 6).

†9000. Dissertation. (1-12).

†Grades of S, U, or IP will be given.

Electrical Engineering

BABAJIDE O. FAMILONI, Ph.D., *Chair*
Room 206, Engineering Building

STEVEN T. GRIFFIN, Ph.D.
Coordinator of Graduate Studies
Room 205, Engineering Building
(901) 678-2175

E-mail: eegradlib@memphis.edu
<http://lear.csp.ee.memphis.edu>

MEMBERS

CHARLES WILSON BRAY, *Professor*

Ph.D. (1969), University of Tennessee [2000]

MICHAEL DALEY, *Professor*

Ph.D. (1973), University of Rochester [2000]

RUSSELL DEATON, *Assistant Professor*

Ph.D. (1992), Duke University [2000]

BABAJIDE FAMILONI, *Associate Professor*

Ph.D. (1986), University of Alberta-Edmonton, Canada [2000]

STEVEN T. GRIFFIN, *Associate Professor*

Ph.D. (1979), University of Illinois [1999]

CARL EDWIN HALFORD, *Professor*

Ph.D. (1970), University of Arkansas [2000]

WILLIAM H. JERMANN, *Professor*

Ph.D. (1967), University of Connecticut [2002]

DAVID RUSSOMANNO, *Assistant Professor*

Ph.D. (1993), University of South Carolina [2000]

ASSOCIATE MEMBERS

HICHEM FRIGUI, *Assistant Professor*

Ph.D. (1997), University of Missouri [2004]

JOHN HERBERT REECE, *Assistant Professor*

Ph.D. (1992), North Carolina State University [2000]

TIMOTHY A. WILSON, *Assistant Professor*

Sc.D. (1993), Massachusetts Institute of Technology [2000]

ADJUNCT MEMBERS

WILBURN E. REDDICK

Ph.D. (1991) Memphis State University [1999]

I. The Department of Electrical Engineering offers graduate programs leading to the Master of Science degree with a major in Electrical Engineering (concentrations in Automatic Control Systems, Communications and Propagation Systems, Electro-optical Systems, and Engineering Computer Systems) and a Ph.D. degree with a major in Engineering (concentration in Electrical Engineering).

II. M.S. Degree Program

A. Program Requirements

1. Thesis option. 30 semester hours, including a thesis (6 semester hours). An average grade of "3.00" must be maintained in ALL Electrical Engineering graduate coursework.
 - a. No more than 9 semester hours may be taken outside the department. Adviser's approval is required.
 - b. At least 21 hours at the 7000 level are required, of which at least 18 hours must be in Electrical Engineering, including either ELEC 7100 or 7251.
2. Non-thesis option. 33 semester hours. An average grade of "3.00" must be maintained in ALL Electrical Engineering graduate coursework.
 - a. No more than 9 semester hours may be taken outside the department. Adviser's approval is required.
 - b. Each student will be required to complete ELEC 7991 or ELEC 7992 for a total of at least 3 hours.
 - c. At least 23 semester hours at the 7000 level required, of which at least 18 hours must be in Electrical Engineering, including either ELEC 7100 or 7251.
3. All students are required to pass a comprehensive exam during their last semester.
4. Students may elect to pursue graduate work in one of the following areas of concentration by completing 21 semester hours of coursework. At least 12 of the 21 semester hours must be taken at the 7000 level.
 - a. Electro-optical Systems: ELEC 6240, 6241, 6242, 6243, 7211, 7214, 7243, 7245.
 - b. Automatic Control Systems: ELEC 6251, 6252, 6253, 6261, 7100, 7240, 7251, 7252, 7521, 7522, 7523, 7524.
 - c. Engineering Computer Systems: ELEC 6222, 6230, 6232, 6270, 6272, 6274, 6270, 6730, 7214, 7215, 7240, 7261, 7262, 7267, 7720.
 - d. Communications and Propagation Systems, ELEC 6212, 6230, 6232, 7211, 7231, 7232, 7233, 7251, 7252.

Note: Projects I or II (ELEC 7991 or 7992) or Thesis ELEC 7996) may be taken for credit in any of the areas of concentration.

B. Retention Requirements

All students enrolled in the Department of Electrical Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Electrical Engineering.

1. Students having been unconditionally admitted who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing if no more than two (2) grades of 2.00 or lower have been earned. (See item 3 below).
2. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all course work at The University of Memphis, including all Electrical Engineering course work and all 7000 level course work. Any student not meeting these conditions will be placed on probation by the department.
3. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed at the end of the semester in which a third grade of 2.00 or lower is earned.
4. A student who has been dropped from the graduate program in the Department of Electrical Engineering will be denied permission to enroll in Electrical Engineering courses in semesters subsequent to dismissal from the department.

5. Courses applied to the M.S. degree program requirements must have the adviser's approval.

III. Ph.D. Degree Program

See the beginning of the College section for admission, retention, and graduation requirements.

Program Requirements

Students entering the Ph.D. program at the master's level must take the Ph.D. Qualifying Examination prior to registering for their third semester in the Ph.D. program. Failure to do so may prevent the student from registering for the third semester.

ELECTRICAL ENGINEERING (ELEC)

6202. Electrical Power Systems. (3). Investigation of problems associated with the transmission of electrical energy. Load-flow studies, and fault analysis by use of symmetrical components.

6204. Power Distribution Systems. (3). Distribution of power from transmission systems to users: primary and secondary feeders; voltage regulation; underground, overhead and network design; lighting and protective device coordination.

6212. Electromagnetic Field Theory II. (4). Plane waves, steady state and transient solutions of transmission line equations. Steady state solutions of waveguide equations.

6221. Electronics III. (4). Applications of analog and digital electronic circuits; special purpose circuits and devices. Three lecture, three laboratory hours per week.

6222. Digital Logic and Computer Design. (3). Applications of digital system design using MSI, LSI, and VLSI circuits; design of arithmetic logic units, multiple input controllers, and practical interfacing techniques.

6223. Electrical Engineering Instrumentation. (4). Transducers for physical systems; mechanical, temperature, acoustic and biomedical transducers; methods of processing and analyzing data. Three lecture three laboratory hours per week.

6230. Data Communications Systems. (3). Data communications in information and computing systems. Analog and digital means of transmitting and controlling information. Organization and requirements of data communication systems including modulation and demodulation, multiplexing, switching, error detection and correction.

6231. Communication Theory. (3). Frequency and time domain; modulation, random signal theory; autocorrelation; noise, communication systems.

6232. Discrete Signal Processing. (3). Introduction to discrete-time signal analysis; discrete system concepts, discrete-time Fourier analysis, sampling of continuous-time signals, z-transform, and transform analysis of discrete systems; structures for discrete-time systems and discrete filter design techniques.

6235. Random Signal Analysis. (3). Analysis of signals using techniques of probability and statistics; introduction to probability, random processes and statistics; discrete signals and analog signals with random components in time, spatial and frequency domains; autocorrelation, cross-correlation and power spectra applied to various signals; effects of discrete filters, and analog.

6240. Lasers. (3). Laser theory, analysis, and design; quantum description of light generation, ray optics, cavity design, Gaussian beams, and optical resonators; laser survey.

6241. Solid State Physical Electronics. (3). Quantum concepts; statistics; crystal structure; conduction processes in solids; p-n junction and devices; field effect devices; charge transfer devices.

6242. Electro-Optics. (3). Classical optics including Gaussian optical Newtonian optics, and vergence theory; optical design with aberration concepts, F-numbers, pupils and stops; radiometry with respect to flux transfer calculations; light sources and detectors.

6243. Linear Optical Systems. (3). Review of Fourier techniques for analysis and design of linear systems, extension to 2-d methods; 2-transforms applied to linear optical systems and data processing.

6251. Control System Engineering. (3). General equations of physical linear systems and their transfer functions. Transient analysis and stability of control systems. Bode plots, Nichols plot, Routh-Hurwitz criterion, root locus method, introduction to compensation techniques and systems in state space.

252. Digital Control Systems. (3). Problems involved with analysis techniques applicable to digital control systems. Requires a prior knowledge of Laplace transforms. Basic knowledge of feedback control theory desirable.

253. Digital Systems Laboratory. (1). Investigation of fundamental properties associated with analysis of control systems, compensating networks, analog and digital computer simulations. COREQUISITE: ELEC 6251 or 6252.

254. Digital Control Systems Laboratory. (1). Fundamental properties associated with digital control systems engineering; laboratory procedures in analysis of digital control systems, compensating networks, digital computer simulations and PLCs. CORREQUISITES: ELEC 6252.

261. Introduction to Network Synthesis. (3). Design, simulation, and realization of active filter networks with emphasis on sensitivities, tolerances, and implementation.

270. Introduction to Microprocessors. (4). LSI circuitry, microprocessor architecture, hardware and software, applications and system design. Three lecture, three laboratory hours per week.

272. Engineering Software. (3). Introduction to hierarchical operating systems. Use of the C programming language.

273. DataBase Engineering. (3). Logical database design emphasizing entity-relationship, relational, object-oriented, and logic data models. Design theory for relational databases, relational query languages, and introduction to integration of database and knowledge-based systems for engineering applications. Emerging trends in database machine design and implementation. PREREQUISITES: ELEC 3160 or permission of instructor.

274. Software Design with ADA. (3). Introduction to ADA; detailed software design methodology using structured and object oriented techniques for large systems; reusable components, ADA programming support environment. PREREQUISITE: Knowledge of a structured high order language.

275. Network Programming. (3). Introduction to engineering of computer networks, network hardware, and network software. Design of software systems for network applications. PREREQUISITES: ELEC 1207 and ELEC 3221.

276. Advanced Network Programming. (3). Advanced methods for engineering software systems for network applications. Topics include implementations of distributed object models, remote database connectivity, and reusable software components. PREREQUISITE: ELEC 4275 or permission of instructor.

277. DSP Microprocessors. (4). Architecture and instruction set of fixed-point and floating-point devices. Hardware interfacing, host communications, real-time signal generation, filtering, and code development using assembly language and C. PREREQUISITES: ELEC 222 and ELEC 3202.

720. Introduction to Artificial Intelligence. (3). (Same as COMP 720.) Fundamentals of programming in LISP; central ideas of artificial intelligence, including heuristic search, problem solving, slot-filler structures, and knowledge representation.

730. Expert Systems. (3). (Same as COMP 6730.) Fundamentals of programming in PROLOG, central ideas of expert system development, including knowledge representation, control structures, tools, knowledge acquisition, and knowledge engineering.

800-809. Special Topics in Electrical Engineering. (1-3). Topics are varied and announced in *Schedule of Classes*.

800-8100. Linear Systems Analysis. (3). Systems concepts and mathematical tools including Z-transforms; analysis of systems, both continuous and discrete, in the time domain and frequency domain.

821-8211. Advanced Electromagnetic Field Theory. (3). Advanced studies in electromagnetic fields, radiation and propagation of energy. PREREQUISITE: ELEC 6212 or permission.

8214-8214. Image Processing. (3). Theory and applications of digital image processing, sampling, quantization, enhancement and restoration of images; use of segmentation, descriptors, and pattern recognition; architectures for image processing.

8215-8215. Digital Signal Processing. (3). Application of discrete transform theory to spectral analysis, digital filters, random signal analysis. PREREQUISITE: Permission of instructor.

8230-8230. Solid State Devices. (3). Internal function, limitations, and applications of unique components found in modern telecommunication designs. Electro-optic devices, detectors, resonators, antenna, and negative resistance components. PREREQUISITE: ELEC 7231.

8231-8231. Communication Electronics. (3). Analysis and design of small and large signal amplifiers. Multistage amplifiers. Analysis and design of oscillators. Feedback and stability in amplifier design.

8232-8232. Analog Communication Circuit Design. (3). Design and applications of analog communication systems. Transmitter and receiver technologies. PREREQUISITE: ELEC 7231 or permission.

8233-8233. Power Electronics. (3). Power semiconductor switches, rectifiers, phase-controlled rectifiers, and other power control devices; power control applications.

8240-8240. Neural Network Methods. (3). Theories, concepts and domain of application of neural networks; network paradigms of Hopfield, Grossberg, Kohonen and others; architecture and capabilities of neural networks; design and implementation of neural networks for practical applications.

8243-8243. Fourier Optics. (3). Analysis of two-dimensional linear systems, scalar diffraction theory, Fresnel and Fraunhofer diffraction. Fourier transforming properties of lenses, spatial frequency analysis of optical systems, optical information processing and holography.

8245-8245. Statistical Optics. (3). Techniques for describing random processes applied to generation, propagation, imaging and detection of light; statistical properties of light, coherence, imaging with inhomogeneous media, statistics of photoelectric detection of light.

8251-8251. Random Signals and Noise. (3). Statistical methods for describing and analyzing random signals and noise. Autocorrelation, crosscorrelation, and spectral density functions. Optimal linear filter theory.

8252-8252. Information Theory. (3). Introduction to entropy and channel capacity, group codes, block codes, cyclic codes. Application of coding techniques to improve system reliability. Error correcting codes. PREREQUISITE: ELEC 7251 or permission of instructor.

8261-8261. Architecture and Design of Digital Computers. (3). Advanced logical design of hardware and organization structure of digital computers; architectural properties and control strategies; processor and memory organizations, addressing and interrupt structures, and I/O controllers; hardware and software trade-offs, and speed considerations.

8262-8262. Logical Foundations of Artificial Intelligence. (3). Logical foundations of artificial intelligence, predicate calculus, declarative knowledge, inference, resolution strategies, non-monotonic reasoning, induction, probabilistic logic, belief, state and change, and intelligent-agent architecture. PREREQUISITE: Permission of instructor.

8266-8266. PROLOG Processing for Intelligent Systems. (3). The engineering of intelligent systems using the PROLOG language for implementation. Advanced PROLOG processing, hardware, and software architecture for PROLOG-based machines. PREREQUISITE: ELEC 6720 or 6730 or permission of instructor.

8267-8267. LISP Processing for AI Applications. (3). Fundamentals of LISP programming, symbolic processing, searching, goal reduction, matching, problems and problem spaces, problem solving methods, and AI applications.

8268-8268. Object-Oriented Data Engineering. (3). Design of hardware and software from a perspective of interacting objects that combine data and behavior. Engineering data models, analysis and design processes, implementation, large engineering system issues, and reverse engineering. Object-oriented database design for CASE, CAD/CAM, and related engineering database environments.

8273-8273. Modern Microprocessors. (3). Introduction to capabilities of state-of-the-art microprocessors and their supporting components.

8521-8521. Advanced Control System Engineering. (3). Cascade and feedback compensation. Analysis and control of nonlinear systems. Introduction to optimal techniques. PREREQUISITE: ELEC 6251 or permission.

8522-8522. Stochastic and Adaptive Controls Theory. (3). Principles and applications of deterministic and statistical design, random processes in automatic control.

7523-8523. Theory of Optimal Control Systems. (3). State variable description of systems, maximum principle of Pontryagin, optimization of linear systems with quadratic performance measures, time and field optimal systems.

7524-8524. Parameter Estimation and Controls. (3). Principles of parameter estimation and application to systems engineering.

7720-8720. Artificial Intelligence. (3). Central issues of artificial intelligence, including game playing, planning, machine learning, common-sense reasoning, perception and action; implementations in LISP. **PREREQUISITE:** ELEC 6720.

7740-8740. Neural Networks. (3). (Same as COMP 7740-8740). Learning algorithms for multilayer perceptrons, least-mean squares, backpropagation and its variants, cascade-correlation, other supervised learning algorithms; unsupervised methods, including Hebbian, competitive and reinforcement learning; applications to associative memories, combinatorial optimization, component analysis, function approximation, pattern classification; theory of neurodynamics, including equilibrium, stability, and computational power.

7900-10-8900-10. Special Topics in Electrical Engineering. (1-3). Topics are varied and announced in *Schedule of Classes*.

7991-8991. Projects I. (1-3). Independent investigation of a problem selected in consultation with instructor; report required. Repeatable by permission

7992-8992. Projects II. (1-3). Independent investigation of a problem selected in consultation with instructor; report required. Repeatable by permission.

†7996. Thesis. (1-12). Master's thesis. Only six hours are applicable to the degree.

8990. Research Practicum. (6). Problem-solving research activities in engineering. Student assigned a project that is either being conducted currently by faculty member or one developed under supervision of faculty member. Whenever possible, project will be within student's major field of study.

†9000. Dissertation. (1-12).

†Grades of S, U, or IP will be given.

Engineering Technology

RONALD L. DAY, M.A., *Chair*
Room 203 Technology Building

DEAN LANCE SMITH, Ph.D.
Coordinator of Graduate Studies
Room 206 Technology Building
(901) 678-3300

E-Mail: gradtech@cc.memphis.edu
<http://www.people.memphis.edu/~engtech/grad.htm>

MEMBERS

DEAN LANCE SMITH, *Assistant Professor*
Ph.D. (1972), The University of Michigan [2004]

ASSOCIATE MEMBERS

SHERRY BRYAN-HAGGE, *Associate Professor*
M.Arch. (1991), Virginia Tech [2001]

RONALD L. DAY, *Associate Professor*
M.A. (1970), Western Kentucky University [2001]

ROBERT L. DOUGLAS, *Associate Professor*
M.S. (1967), University of Houston [2001]

CARL R. WILLIAMS, *Assistant Professor*
M.B.A., (1983), Memphis State University [2004]

I. The Department of Engineering Technology offers a graduate program leading to the Master of Science degree with a major in Engineering Technology. Concentrations are available in Architecture, Electronics, and Manufacturing.

II. M.S. Degree Program

A. Program Admissions

Admission requirements of the College.

B. Program Prerequisites

Applicant must have completed a minimum of 18 semester hours of upper division credit in an appropriate area of Technology or related area.

C. Program Requirements

1. A total of 33 semester hours - non-thesis option. Students selecting the non-thesis option must complete TECH 7991, Projects I.
2. A total of 30 semester hours for candidates selecting the thesis option.
3. Each student must complete the following core courses: TECH 7015, 7020, and MGMT 7030.
4. A minimum of 12 semester hours must be taken in one concentration area.
5. Candidates for the degree must average a 3.0 in all Technology courses.
6. Candidates for the degree must pass a comprehensive written examination conducted by three faculty members designated by students and their advisers.
 - a. Comprehensive examinations may be taken by students in good standing during the last term of course work.
 - b. The comprehensive written examination will be administered the first Monday of April, July, and November of each year. If the university is not in session on these dates the following Monday will be designated.
7. A follow-up oral examination is optional with the examining committee.
8. Concentrations may be made by selection of courses from the following areas:
 - a. Architectural: 6510, 6520, 6535, 7105, 7106, 7601.
 - b. Electronics: 6262, 6272, 6281, 7223, 7263, 7273, 7283, 7801, 7811, 7821, 7822, 7831, 7841.
 - c. Manufacturing: 6472, 6474, 6476, 6950, 7401, 7402, 7404, 7406, 7408, 7414.

ARCHITECTURAL TECHNOLOGY (ARCH)

6535. Professional Practice. (3). Studies in professional practice of architecture; case problems initiating and managing a professional practice; exploration of the essential elements of professional practice. Topics include administration and management, professional services of the architect, contracts, codes, specifications, and professional ethics. **PREREQUISITE:** ARCH 3520.

COMPUTER ENGINEERING TECHNOLOGY (CETH)

6262. Modern Programming. (4). Application of Java and JavaScript programming languages to problems from selected area of engineering technology. Includes data collecting, modeling techniques, constraints, program development and validation, and interfacing with peripherals and machine language. Three lectures, three laboratory hours per week. **PREREQUISITES:** TECH 2261 and 3233.

6272. Operating Systems and Data Communications. (4). Memory management, processor management, device management, and file management. MS-DOS operating system, Windows NT, UNIX operating system, VAX/VMS operating system. Three lecture, three laboratory hours per week. **PREREQUISITES:** TECH 3233 and 3251 or permission of instructor.

6281. Computer Network Technology. (4). Local-area networks. Interconnecting computers and peripherals. Installation of network hardware and software. Communications between computers. Sharing peripherals. Three lecture, three laboratory hours per week. **PREREQUISITE:** TECH 4234.

MANUFACTURING ENGINEERING TECHNOLOGY (METH)

6472. Computer Aided Drafting and Design. (3). (TECH 6472). Overview of CADD Technology, hardware and software options (two- and three-dimensional principles) and applications to produce computer generated designing and working drawings. Two lecture, three laboratory hours per week. **PREREQUISITE:** TECH 1521 or equivalent

6474. Automation and Robotics. (3). (TECH 6474). Capabilities and applications of programmable logic controllers, computers and robotics in automated systems. Two lecture, three laboratory hours per week. **PREREQUISITE:** Permission of instructor.

6476. Computer Aided Manufacturing. (3). (TECH 6476). Computer numerical control programming by manual data input and distributed numerical control by computer assistance. System assessment CNC machines and components for the integrated manufacturing environment. Two lecture, three laboratory hours per week. **PREREQUISITE:** TECH 3281 or 4472.

TECHNOLOGY (TECH)

6510. Construction Planning and Scheduling. (3). Principles of planning, scheduling, organizing, and controlling construction projects. Studies in critical path method (CPM) and PERT, with resource leveling and financial scheduling. Computer applications in CPM and PERT emphasized.

6520. Construction Methods and Equipment. (3). Theory and practice of construction operations, equipment, utilization, construction methods, analysis of costs, crew, and equipment.

6950. Product Safety Management. (3). Modern concepts of accident prevention by means of safety analysis. Analyses of responsibilities and requirements of management in producing safe consumer products. Emphasis on electrical and mechanical hazards.

7015. Applied Statistical Methods of Industry. (3). Application of statistical concepts to production processes and data gathering in industry including frequency, distribution, location and dispersion, probability dispersions, confidence limits, significance tests, and industrial sampling.

7020. Technical Research Writing. (3). Investigations into the development and writing of technical research. Emphasis on the literature review, data collection, data analysis, and presentation of findings in a proposal format. Written and oral presentations will be stressed in the course. PREREQUISITE: Permission of instructor.

7105. Project Planning and Scheduling. (3). Contemporary methods used in project planning and scheduling; emphasis on critical path method (CPM) with computer application; solution of actual problems stressed.

7106. Project and Equipment Cost Analysis. (3). Different elements of project and equipment costs; annual cost, depreciation, replacement cost, and retirement of equipment; benefit-cost ratio analysis of multiple alternatives; income tax influence on buying new equipment; computer application in project cost analysis.

7223. Computer Techniques in Laboratory Environment. (3). Laboratory applications of microcomputer and minicomputer to process control, digital/ data communications, simulation, and signal conditioning. One lecture, five laboratory hours per week. PREREQUISITE: Permission of instructor.

7263. Advanced Digital Circuits and Applications. (3). Pragmatic treatment of analysis, synthesis, and applications of digital integrated circuits and systems. Two lecture, three laboratory hours per week. PREREQUISITE: Permission of instructor.

7273. Advanced Microprocessor Architecture. (3). Structure of the microprocessor, Bit-slice and monolithic systems; ALU design, data transfer and storage registers and control unit logic; microprogramming techniques. Three lecture hours per week. PREREQUISITE: Permission of instructor.

7283. Advanced Data Acquisition. (3). Use of digital and analog circuits to accomplish the computer analysis of empirical data; transducers, digital and analog conversions, linear and operational amplifiers, interfacing techniques; data scaling and manipulation. Two lecture, three laboratory hours per week. PREREQUISITE: Permission of instructor.

7401. Advanced Work Design and Measurement. (3). Philosophy and practice of waste reduction in process or service system; review of work measurement techniques; advanced study of performance rating, standard data, basic motion time system, learning curves, time formula construction, and work sampling. PREREQUISITE: Tech 4460 or permission of instructor.

7402. Advanced Statistical Quality Control. (3). Taguchi methods for improved process and product design; loss function, ANOVA, orthogonal arrays and linear graphs, multiple level experimental design, parameter and tolerance design. PREREQUISITE: Tech 4462 or permission of instructor.

7404. World-Class Manufacturing. (3). World-class manufacturing concepts and companies that have successfully implemented Just-In-Time, total quality control, and continuous improvement techniques. PREREQUISITE: Tech 4464 or permission of instructor.

7406. Materials Handling Systems. (3). Analysis, design and evaluation of traditional and contemporary approaches to materials handling- analytical and computer procedures for designing handling systems. PREREQUISITE: Permission of instructor.

7408. Production Processes. (3). A coordinated study of manufacturing processes and equipment, operation sequence planning, economic aspects of equipment selection, tooling and processing a product from product design to final assembly for quantity production.

7414. Group Technology and CIM. (3). Applications of Group Technology (GT) and Computer-Integrated Manufacturing (CIM); integrating materials management and shop-floor-data acquisition and control. PREREQUISITE: TECH 6474 or permission of instructor.

7601. Architectural Graphics. (3). Techniques of contemporary presentation applicable to architectural design with emphasis on advanced perspective and delineation. Computer applications and calibration table will be utilized for the theoretical procedures. Practical problems utilized to develop the creative capacities of mature students.

7801. Precision Measurements. (3). Review of linear and electronics fundamentals; analysis, synthesis, specifications, and applications of electronic test equipment and systems. Two lecture, three laboratory hours per week. PREREQUISITE: Permission of instructor.

7811. Technology of Electronic Communication Systems. (3). Engineering and economic aspects in the design and operation of publicly and privately owned communication systems. PREREQUISITE: Permission of instructor.

7821. Advanced Microwave Technology. (3). Microwave theory and equipment applications, including techniques for measuring power, frequency, frequency spectrums, impedance, VSWR, reflection coefficient, circuit Q, noise, and antenna gain. Two lecture, three laboratory hours per week. PREREQUISITE: Permission of instructor.

7822. Industrial Process Control Systems. (3). Simulation and pragmatic analysis of closed loop industrial control systems using programmable logic controllers; practical considerations of control loop quality and stability; applications of digital computer for direct and supervisory control and on-line analysis. Two lecture, three laboratory hours per week. PREREQUISITE: Permission of instructor.

7831. Advanced Integrated Circuits Technology. (3). Theory and applications of integrated circuits and systems; emphasis on linear integrated circuits. Characteristics, power requirements, and applications to amplifiers, oscillators, demodulators, waveshaping circuits, active filters, converters, and troubleshooting techniques. Two lecture, three laboratory hours per week. PREREQUISITE: Permission of instructor.

7841. Fiber Optics in Communication and Other Applications. (3). Practical approach and theoretical analysis of fiber optics; emphasis on fiber optics transmission and system performance; practical aspects of fibers connection and loss encountered; fiber optics components such as couplers and switches. PREREQUISITE: TECH 3811 or permission of instructor.

7991. Projects I. (3). Independent investigation of a problem selected in consultation with instructor; report required.

7992. Projects II. (3). Independent investigation of a problem selected in consultation with instructor; report required.

†7993. Internship in Engineering Technology. (3). Practical experience in engineering technology. Students are placed with governmental or private organizations. Project must be approved and supervised by department faculty. Academic credit granted on certification of cooperating agency and acceptance by the supervising faculty of written report. May be repeated for total of six semester hours credit. PREREQUISITE: Permission of instructor.

†7996. Thesis (1-6). Writing of the thesis with emphasis on adequate setup of the problem, collection of data, their use, and conclusions. Students must present in writing a proposal acceptable to the graduate committee under whose direction the thesis is to be written.

†Grades of S, U, or IP will be given.

Industrial and Systems Engineering

MARTIN E. LIPINSKI, Ph.D.
Coordinator of Graduate Studies
Room 104 Engineering Building
(901) 678-3285

E-mail: racerm@memphis.edu
<http://inse.memphis.edu>

- I. The Industrial and Systems Engineering program is designed to provide an interdisciplinary area of study emphasizing model building and optimization techniques. This program offers a Master of Science degree with emphasis areas individually designed.

II. M.S. Degree Program

A. Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

B. Program Prerequisites

1. a. A bachelor's degree from an ABET accredited four-year program or
b. A bachelor's degree from a non-ABET accredited four-year program plus 18 hours of upper division mathematics and science courses.
2. Three semesters of calculus, one semester of upper division statistics, and one semester of engineering economics or equivalent.

C. Program Requirements

1. Non-thesis option: 33 semester hours with a minimum of 21 hours in the Engineering College and a maximum of 9 hours in a collateral area as defined by the chairman.
2. Thesis option: 30 semester hours with a minimum of 18 hours in the Engineering College and a maximum of 6 hours in a collateral area as defined by the chairman, and 6 hours of thesis credit.
3. INSE 7601, 7602, 7608, 7610, and 7641 required for both options.
4. A faculty advisory committee will be appointed for each student entering the program. Students will meet with their committee within the first two weeks of their first semester. The advisory committee will define the students program including any necessary language or computer communication courses.

D. Retention Policy

All students enrolled in the Industrial and Systems Engineering Program are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status.

1. Students having been unconditionally admitted to the graduate program who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all INSE course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted with conditions must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. Students admitted with program deficiencies must satisfy these deficiencies with a grade of 3.0 or better within his/her first semester of grade work or the student will be placed on probation.
5. A student will be permitted two (2) grades of 2.0 in graduate courses taken at The University of Memphis with no more than one grade of C in INSE courses. A student will be dismissed from the program at the end of the semester in which a third grade of 2.0 is earned or the second grade of 2.0 is earned in INSE courses.
6. A student who has been dropped from the program will be denied permission to enroll in INSE courses in semesters subsequent to dismissal from the department.

INDUSTRIAL AND SYSTEMS ENGINEERING (INSE)

7601. Experimental Analysis. (3). Order statistics, moment-generating-function techniques, point estimation, maximum likelihood estimators, and sampling theory. PREREQUISITE: Permission of instructor. Offered fall semester.

7602. Engineering Experimental Design I. (3). Hypothesis test, analysis of variance, simple and multiple linear regression; introduction to ANOVA and statistical packages. PREREQUISITE: INSE 7601. Offered spring semester.

7604. Engineering Experimental Design II. (3). Applications of statistical methods in noise reducing designs, factorial designs, and fractional factorial designs. BMPD and SPSS emphasized. PREREQUISITE: INSE 7602. Offered fall semester.

7605. Experimental Analysis II. (3). Applied design and analysis of engineering experiments. ANOVA, regression, and nonparametric statistics with emphasis placed on the use and interpretation of statistical packages. Projects required. PREREQUISITE: INSE 7604. Offered spring semester.

7608. Modeling. (3). Principles of problem formulation, verification, and validation; emphasis on recognizing and exploiting applicability of previous course work as it relates to real-world situations. PREREQUISITES: 12 hours in INSE courses. Offered fall semester.

7610. Operations Research I. (3). Deterministic models in Operations Research. Linear, programming; duality, sensitivity analysis, transportation and network models. Offered fall semester.

7616. Operations Research III. (3). Modeling and optimization of non-linear integer, and dynamic programming problems; applications in production, scheduling, and routing. PREREQUISITE: INSE 7610. Offered spring semester.

7620. Network Algorithms. (3). Network and graph algorithms with applications in transportation and communication design; transportation problem, minimum cost flow problem, and tree algorithms. PREREQUISITE: Equivalent of INSE 7610 or permission of instructor. Offered spring semester.

7641. Operations Research II. (3). Stochastic models in Operations Research; Markov chains, queuing theory, inventory systems, and discrete simulation. PREREQUISITE: INSE 7601. Offered spring semester.

7644. Advanced Engineering Economics and Decision Theory. (3). Advanced engineering economy and decision making concepts and techniques in analysis of engineering alternatives emphasizing decision making under risk and uncertainty. PREREQUISITES: INSE 7601 or permission of instructor. Offered spring semester.

7645. Forecasting Techniques. (3). Use of forecasting techniques such as moving averages, exponential smoothing, ARIMA, and Box Jenkins models in engineering analysis of alternatives and decision making. Design project and report required. COREQUISITES: INSE 7601. Offered fall semester.

7647. Quality Assurance and Reliability. (3). Theory of reliability and quality control. The use of probability models. Data display and reduction, sampling statistics and their distributions. Implementation of quality assurance in industrial production. PREREQUISITE: Permission of instructor. Offered fall semester.

7660. Systems Simulation. (3). Principles of stochastic simulation methods for input-output analysis of complex systems; use of SIMSCRIPT simulation languages. PREREQUISITES: INSE 7601, 7602, and permission of instructor. Offered spring semester.

7685. Seminar. (1). Presentations by faculty, members of industry, and students; material presented is representative of state-of-the-art work in field; reports may be either based on own work, or readings of appropriate journal articles. Offered spring and fall semesters.

7900-10. Special Topics in Industrial and Systems Engineering. (1-3). Topics are varied and announced in *Schedule of Classes*. Offered spring and fall semesters.

7991. Research in Industrial Systems. (3). Independent investigation of a problem selected in consultation with instructor, report required. PREREQUISITE: Permission of instructor. Offered spring and fall semesters.

7992. Research in Industrial Systems II. (3). Independent investigation of problem selected with instructor; report required. PREREQUISITE: Permission of instructor. Offered spring and fall semesters.

†7996. Thesis. (1-6).

†Grades of S, U, or IP will be given.

Mechanical Engineering

JOHN I. HOCHSTEIN, Ph.D., *Interim Chair*
Room 312, Engineering Building

TEONG E. TAN, Ph.D.
Coordinator of Graduate Studies
Room 312, Engineering Building
(901) 678-2173

E-Mail: ttan@memphis.edu
[www: http://www.me.memphis.edu](http://www.me.memphis.edu)

MEMBERS

- JOHN I. HOCHSTEIN, *Associate Professor*
Ph.D. (1984), The University of Akron [2004]
WILLIAM S. JANNA, *Professor*
Ph.D. (1976), University of Toledo [2000]
GLADIUS LEWIS, *Professor*
Ph.D. (1976), University of Nottingham, England [2000]
HSIANG HSI LIN, *Professor*
Ph.D. (1985), University of Cincinnati [2000]
LADA MO, *Associate Professor*
Ph.D. (1989), University of Tennessee [2000]
EDWARD H. PERRY, *Professor*
Ph.D. (1970), California Institute of Technology [2000]
GARY QI, *Assistant Professor*
Ph.D. (1996), Texas Technological University [2004]
TEONG TAN, *Associate Professor*
Ph.D. (1984) Iowa State University [2004]
RICHARD C. WARDER, JR., *Professor*
Ph.D. (1963), Northwestern University [2000]

ASSOCIATE MEMBER

- RIKANT GIR, *Assistant Professor*
Ph.D. (1992), University Strathclyde [2002]

ADJUNCT MEMBER

- HU-HO LU, *Assistant Professor*
Ph.D. (1989), Syracuse University [2001]
IAI H. TRIEU
Ph.D. (1995), Case Western Reserve University [2000]

The department of Mechanical Engineering offers a graduate program leading to the Master of Science degree with a major in Mechanical Engineering. Concentrations are available in design and manufacturing, energy systems, mechanical systems, and power systems.

M.S. Degree Program

A. Program Admission

The Herff College of Engineering has established uniform admission criteria which identify the pool of master's level applicants from which the department evaluates and recommends qualified applicants to be admitted.

B. Program Requirements

A more detailed description of the information listed below will be given by the Coordinator of Graduate Studies to students admitted into the Mechanical Engineering M.S. program.

1. Thesis Option: A minimum of 30 semester hours total with a minimum of 18 hours in 7000 level MECH courses consisting of 6 hours in MECH 7341 and 7342 as required core courses, and 6 hours in MECH 7996 for a thesis. A maximum of 9 hours in 6000 level MECH or collateral courses and a maximum of 3 hours in a 7000 level collateral course. Collateral courses must be in mathematics or physical science, or another engineering area, or a combination.
2. Non-Thesis Option: A minimum of 33 semester hours total with a minimum of 21 hours in 7000 level MECH courses, consisting of 6 hours in MECH 7341 and 7342 as required core courses, and 6 hours in MECH 7992 for an independent research project. A maximum of 9 hours in 6000 level MECH or collateral courses and a maximum of 3 hours in a 7000 level collateral course. Collateral courses must be in mathematics or physical science, or another engineering area, or a combination.
3. Transfer credit is limited to 6 credit hours.
4. Course Load Maximums:
15 credit hours per semester for full-time student
9 credit hours per semester for full-time conditional student
12 credit hours per semester for graduate assistants. There are a limited number of graduate assistantships available; contact the chair of Mechanical Engineering for applications.

5. Students selecting the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the students knowledge in mechanical engineering.
6. Students selecting the non-thesis option will be required to pass both written and oral comprehensive examinations during the final semester of study. In addition, the student is required to complete a 6-hour independent research project (MECH 7992) culminating in both written and oral reports.
7. Students who wish to take mechanical engineering courses must have prior consultation and approval by the Coordinator of Graduate Studies or by an advisory committee in the Department of Mechanical Engineering.

C. Retention Policy

1. Students who have been admitted to the program on a conditional basis must satisfy all requirements of their admission by the end of the first semester of enrollment.
2. A student must maintain a GPA of 3.00 or higher throughout the program. A student will be permitted two grades of C (2.0) in courses approved for the degree. A student will be dismissed at the end of the semester in which a third grade of C (2.0) or lower is earned.

D. Graduation Requirements

1. A minimum of 70% of the total required hours must be 7000 level courses.
2. All coursework are completed in the last 6 years.
3. No more than 7 hours of C (2.0) can qualify for degree requirements.
4. A "3.00" average in combined graduate coursework.
5. Successful completion of comprehensive examination and thesis or non-thesis option requirement.
6. File "Application for Admission to Candidacy for Master's Degree" form and "Intent to Graduate" card by the deadline published in the Graduate School Catalog and *Schedule of Classes*. Deadline is also displayed on department bulletin board.

III. Ph.D. Degree Program

See the beginning of this College section for admission, retention, and graduation requirements. A more detailed description of the information will be given by the Coordinator of Graduate Studies to students admitted into the Mechanical Engineering concentration.

MECHANICAL ENGINEERING (MECH)

6305. Intermediate Fluid Mechanics. (3). Continuation of MECH 3331. Introduction to various topics in advanced fluid mechanics, including flow over immersed bodies; open channel hydraulics; compressible fluid flow; turbomachinery; measurements in fluid mechanics; and inviscid flow. PREREQUISITE: MECH 3331.

6309. Gas Dynamics (3). Concepts in compressible flow; emphasis on real and ideal gas dynamic effects and non-equilibrium flow; application of numerical methods. PREREQUISITES: MECH 3312, 3331.

6313. Heat Transfer II. (3). Principles of boiling, condensing, and radiation heat transfer fundamentals of heat exchanger design. PREREQUISITE: MECH 4311.

6315. Heating, Ventilation and Air Conditioning. (3). Psychometric analyses, heating and cooling loads of buildings, and analyses of air conditioning systems. PREREQUISITE: MECH 4311.

6324. Computer Methods in Design. (3). Application of computer-aided analysis software to the design of mechanical components and systems. Introduction to fundamental concepts and principles of finite element methods; design problems and project assignments using finite element analysis package.

6325. Advanced Mechanics of Materials. (3). Biaxial stresses, torsion, unsymmetrical bending of beams, shear centers, contact stresses, failure theory, and other selected topics. PREREQUISITE: MECH 3322.

6326. Biomedical Systems Analysis-Mechanical. (3). Introduction to concepts used in analyzing living systems. Simulation of body functions with mechanical and computer models. Familiarization with the design of mechanical bioengineering devices such as heart valves, heart-lung machines, renal analysis machines. PREREQUISITES: MECH 2332, 3322.

6330. Introduction to Composite Materials. (3). Introduction to fiber reinforced composite materials; mechanical behavior, strength, design methodology, and implementation of computer aided design. PREREQUISITES: MECH 3320, 3322.

6333. Aerospace Propulsion Systems. (3). Fundamentals of airbreathing and rocket propulsion devices. Principles of combustion thermodynamics, gas turbine operation, solid and liquid propellants,

performance evaluation, and atmospheric and space mission propulsion requirements. PREREQUISITE: MECH 4331.

6337. Internal Combustion Engines. (3). Principles of Otto, Diesel, and Brayton cycle engines. Effects of various fuels and fuel delivery systems, air induction systems, ignition systems, and pollution control techniques on engine performance. PREREQUISITES: MECH 3312, 3331.

6340. Manufacturing Processes. (3). Fundamentals of mechanical behavior of materials, manufacturing properties of materials; casting, bulk deformation, sheetmetal forming; material removal processes; processing of polymers, ceramics and glasses composite materials; powder metallurgy; fastening and joining processes; nontraditional manufacturing processes; economics of integrated design and manufacturing processes; economics of integrated design and manufacturing. PREREQUISITES: MECH 3320, 3322.

6345. Design of Mechanisms. (3). Graphical and analytical mechanism synthesis techniques for path generation, function generation, rigid body guidance and optimization of force transmission characteristics. PREREQUISITES: MECH 3321, 4322.

6346. Advanced Mechanical Controls. (3). Advanced modeling of mechanical control systems; review of digital and optimal control systems, and simulation of control systems. PREREQUISITE: MECH 4344.

6350. Principles of Biomechanics. (4). (7308). Analyses of bone and joint structure of the body related to basic mechanical equations and properties. Mathematical modeling of bone structure, mechanical properties, static loading, dynamic loading, fatigue, wear, corrosion. PREREQUISITES: MECH 3320, 3322.

6371. Mechanical Vibrations. (3). Kinematics of harmonic and non-harmonic vibrations; systems of one and several degrees of freedom, free and forced vibrations; self-excited vibration. PREREQUISITES: MECH 3321, 3341.

7115-8115. Plate and Shell Structures. (3). (Same as CIVL 7115). Analysis of rectangular and circular flat plates; large deflections of plates; variational methods; analysis of shells as surfaces of revolution under symmetric and unsymmetric loading.

7302-8302. Theory of Continuous Media. (3). (Same as BIOM 7-8103). Analysis of stress and deformation at a point; derivation of the fundamental equations in Cartesian tensor notation by application of the basic laws of conservation of mass, energy, and momentum in mechanics and thermodynamics. PREREQUISITES: MECH 3322, 7341-8341.

7303-8303. Advanced Dynamics. (3). Formulation of three-dimensional nonlinear dynamical equations of motion for particles and rigid bodies; modeling of dynamic systems; numerical integration. PREREQUISITES: MECH 3321, 7341-8341.

7304-8304. Nonlinear Dynamics and Chaos. (3). Dynamics of differential equations; geometric concepts in Hamiltonian dynamics; classical perturbation theory; chaos in Hamiltonian systems and area-preserving mappings.

7305-8305. Inviscid Flow Theory. (3). General equations of fluid mechanics; equations of two-dimensional inviscid flow; stream function and velocity potential definitions; irrotational flow; Laplace's equation in various flow fields and geometries; combined flows and superposition. PREREQUISITES: MECH 3312, 3331, 7341-8341.

7306-8306. Viscous Flow. (3). Advanced introduction to physical principles governing viscous fluid flow; fundamental equations developed from first principles and topic include: flow kinematics, derivation of Navier-Stokes equations, exact solutions of N-S equations for internal and external flows, dimensional analysis, creeping flows, vorticity dynamics, flow control.

7307-8307. Advanced Viscous Flow. (3). Advanced topics in viscous flow including incompressible and compressible boundary layer theory, free shear flows, stability analysis, turbulent flow modeling, approximate N-S solutions, non-Newtonian flows.

7323-8323. Conduction Heat Transfer. (3). Fundamentals of steady-state and transient heat conduction; applications of Fourier series, Laplace transforms, finite differences and finite elements to conduction problems. PREREQUISITES: MECH 4311, 7341-8341.

7324-8324. Radiation Heat Transfer. (3). Fundamentals of radiation properties of surfaces and radiation exchange between surfaces; black,

gray, and non-gray surfaces; integral and numerical techniques employed in radiation problems. PREREQUISITES: MECH 4311, 7341-8341.

7325-8325. Convection Heat Transfer. (3). Fundamentals of free and forced convection heat transfer using differential and integral formulation of laminar and turbulent boundary layers for flow over internal and external surfaces; influence of temperature-dependent properties; convective heat transfer at high velocities. PREREQUISITES: MECH 4311, 7341-8341.

7331-8331. Advanced Thermodynamics. (3). Areas of study include equations of state, aircraft and missile propulsion, refrigeration and heat pump cycles, cryogenics, criteria for thermodynamic equilibrium, binary mixtures, and chemical reactions. PREREQUISITES: MECH 4311, 7341-8341.

7335-8335. Statistical Thermodynamics. (3). Development of fundamental principles of statistical mechanics, quantum mechanics, and kinetic theory. Irreversible phenomena as they relate to thermodynamic processes and systems; conclusions of classical thermodynamics established from microscopic viewpoint. PREREQUISITES: MECH 4311, 7341-8341.

7341-8341. Engineering Analysis I. (3). Analysis of engineering systems using closed form solutions; application of Fourier series and transforms, Laplace transforms, power series methods, vector calculus, ordinary and partial differential equations. PREREQUISITE: MATH 3391.

7342-8342. Engineering Analysis II. (3). Continuation of MECH 7341. Matrices and determinants, complex analysis, conformal mapping techniques, applications to thermal/fluid and applied mechanic problems, engineering applications of probability and statistics.

7355-8355. Engineering Optimization. (3). Practical aspects of optimization methodology with emphasis on techniques and procedure relevant to engineering applications in design, operations and analysis; engineering case studies. PREREQUISITES: MECH 4322, 7342-8342.

7361-8361. Mechanical Behavior of Materials. (3). Performance of materials at elevated temperatures; statistical aspect of brittle fracture; advanced treatment of fatigue failure; linear elastic fracture mechanics; friction and wear; ductile failure; strengthening mechanisms; embrittlement modes; case studies in materials selection. PREREQUISITE: MECH 3320.

7363-8363. Fracture Mechanics. (3). Linear elastic analysis; elastic plastic analysis, dynamic and time-dependent fracture; microstructural aspects of fracture; environment-assisted cracking; fatigue crack growth and propagation; analysis of engineering failures; case studies. PREREQUISITES: MECH 3320, 3322, 3323.

7365-8365. Corrosion. (3). Fundamental causes and mechanisms; corrosion control; study of specific corrosion problems. PREREQUISITE: MECH 3320.

7371-8371. Advanced Mechanical Vibrations. (3). Modeling of linear and nonlinear vibrational systems; control, measurement, and stability of vibrational systems. PREREQUISITES: MECH 6371, 7342-8342.

7374-8374. Theory of Elasticity. (3). Classical theory using tensor notation; analysis of stress, strain, constitutive relationship; equation of compatibility, variational methods; methods of solution; applications. PREREQUISITE: MECH 7302-8302.

7375-8375. Theory of Laminated Plates. (3). Energy formulation governing equations for general laminated plates made of fiber reinforced composites; bending under transverse loading, stability under compression or shear loading, and free vibrations; effects of free edges, shear deformation, thermal loading and swelling; cylindrical bending of sandwich plates.

7378-8378. Introduction to Computational Fluid Dynamics. (3). Introduction to computational fluid mechanics and heat transfer, finite difference and finite volume methods, stability consideration, basis of numerical computation and analysis of model equations and fluid dynamics equation.

7379-8379. Advanced Computational Fluid Dynamics. (3). Advanced introduction to state-of-the-art of computational fluid dynamics; advanced grid generation, numerical schemes, and numerical boundary conditions; numerical computation of compressible inviscid and viscous flows, turbulence modeling, skill of post data process.

7381-8381. Finite Element Methods. (3). General principles and modeling of engineering systems using the finite element method; applications in fracture mechanics, hydrodynamics, and thermal conduction. **PREREQUISITES:** MECH 3341, 7341-8341.

7990-8990. Engineering Practicum. (3). Studies of related practical mechanical engineering problems as an integral part of the established curriculum under the instruction and supervision of a faculty member. Written and oral reports are mandatory. Students may take this course more than once provided permission is granted.

7901-7909-8901-8909. Special Topics in Mechanical Engineering. (1-3). Topics are varied and announced in the *Schedule of Classes*.

†7991-8991. Research Proposal. (1-3). Exhaustive literature search and presentation of both written and oral proposals on engineering topics under supervision of instructor.

†7992. Research Project. (1-6). Independent research investigation of engineering problem under supervision of instructor for students in non-thesis option; both written and oral reports required.

†7996. Thesis. (1-6).

†9000. Dissertation. (1-12).

†Grades of S, U, or IP will be given.

The School of Audiology and Speech-Language Pathology

WALTER H. MANNING, Ph.D.
Associate Dean

MAURICE I. MENDEL, Ph.D.,
Dean

DAVID J. WARK, Ph.D.,
Director of Graduate Studies

(901) 678-5800

E-mail: dluna@memphis.edu

<http://www.ausp.memphis.edu>

Individual program requirements described in the Graduate School Issue of the 1999-2001 *Bulletin of The University of Memphis* are subject to change. Please consult your department or the Office of the Graduate School for changes that may occur before publication of the next issue of this *Bulletin*; or consult the Graduate School website at: <http://www.people.memphis.edu/~gradsch> for the latest catalog updates.

MEMBERS

- MICHAEL P. CANNITO, *Professor*
Ph.D. (1986), University of Texas at Dallas [2000]
ROBYN COX, *Professor*
Ph.D. (1974), Indiana University [2000]
HERBERT JAY GOULD, *Associate Professor*
Ph.D. (1975), University of Illinois [2000]
JOYCE L. HARRIS, *Associate Professor*
Ph.D. (1992), The University of Texas-Austin [2002]
JOEL C. KAHANE, *Professor*
Ph.D. (1975), University of Pittsburgh [2000]
WALTER H. MANNING, *Professor*
Ph.D. (1972), Michigan State University [2000]
MAURICE I. MENDEL, *Professor*
Ph.D. (1970), University of Wisconsin [2000]
KAREN E. POLLOCK, *Associate Professor*
Ph.D. (1981), Purdue University [2005]
GERALD A. STUDEBAKER, *Professor*
Ph.D. (1960), Syracuse University [2000]
DAVID J. WARK, *Associate Professor*
Ph.D. (1971), Indiana University [2000]

ASSOCIATE MEMBER

- EUGENE H. BUDER, *Assistant Professor*
Ph.D. (1991), University of Wisconsin [2002]

ADJUNCT MEMBERS

- BRENDA ANTWINE
M.A. (1975), Memphis State University [2001]
RICHARD BABIN
M.D. (1969), University of California at Los Angeles [2001]
STEPHANIE BEASLEY
M.A. (1980), Memphis State University [2001]
NEAL S. BECKFORD
M.D. (1980), Howard University Medical School [2001]
BENTON W. COX
M.A. (1978), Memphis State University [2001]
LUEDEER DEECKE
M.D. (1966), University of Freiburg at Vienna [2001]
ELIZABETH DOMICO
M.A. (1983), Radford University [2001]
YOLANDA T. EVANS
M.S. (1974), St. Louis University [2001]
WILLIAM HINKLE
Ph.D. (1971), Purdue University [2001]
RANDE H. LAZAR
M.D. (1979), New York Medical College [2001]
DANIEL J. ORCHIK
Ph.D. (1973), Michigan State University [2001]
KAY HOWARD PUSAKULICH
M.A. (1979), Memphis State University [2001]
RUTH RIKE
M.A. (1963), Northwestern University [2001]
DOUGLAS F. ROSE
M.D. (1977), Case Western Reserve University [2001]
MARILYN STEINBERG
M.A. (1981), Memphis State University [2001]

JEROME W. THOMPSON

M.D. (1976), University of California at Los Angeles [2001]

DAVID ZAPALA

Ph.D. (1993), Memphis State University [2001]

- I. The School of Audiology and Speech-Language Pathology offers graduate programs leading to the M.A. and Ph.D. degrees with a major in Audiology and Speech Pathology. Concentrations are available in Audiology and Speech Pathology. The School has Council on Academic Accreditation and Professional Services Board accreditation from the American Speech-Language Hearing Association.

Students may not enroll for courses as graduate non-degree except by permission of the instructor and with approval of the director of graduate studies.

II. M.A. Degree Program

A. Program Admission

All applications will be reviewed by the admissions committee. Students should have a GPA of 3.00 (on a 4 point scale). GRE scores are required (General Test). Applicants are encouraged to submit up to three letters of recommendation directly to the School's Director of Graduate Studies. Although applications may be submitted at any time, likelihood of acceptance and financial assistance for the fall semester is greater for applications received prior to February 1.

Students are expected to be proficient in understanding and use of English.

B. General Program Requirements

Students must complete a minimum of 47 credit hours and meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association.

1. 36 semester hours of graduate work exclusive of thesis, special project and clinical practicum with 24-30 semester hours in the concentration area.
2. Completion of three hours of clinical practicum (AUSP 7104 for Audiology concentration and AUSP 7208 for Speech Pathology concentration) in each semester of full-time graduate study. Students must complete a minimum of nine semester hours of clinical practicum with a grade of 3.00 or above and must obtain a 3.00 or above in their last two semesters. Maximum of 8 credit hours of AUSP 7104/7208 may be counted toward 47 hour requirement.
3. A thesis or non-thesis option is available. Students choosing the non thesis option must take AUSP 7990 (Special Project) and complete written comprehensive examinations.

C. Specific Program Requirements

Assumed Background in Basic Science Course work (12 hours)

Can be taken at The University of Memphis.

- a. Biological/Physical Science (3)
- b. Mathematics (3)
- c. Behavioral/Social Science (6)

Audiology

1. Assumed Background Coursework (15 hours)

Can be taken at The University of Memphis.

- a. Basic Communication Processes: Normal Speech/Language development (3); Other (3).
- b. Speech-Language Pathology: Language Disorders (children or adult (3); Other (3).
- c. Related coursework (3).
2. Audiology Program (47-50 hours)
 - a. Basic Science Coursework (9 hours)
 - AUSP 7001 Hearing Science
 - AUSP 7004 Anatomy and Physiology of the Hearing Mechanism
 - AUSP 7007 Communicative Interaction
 - b. Major Area Coursework (35-37 hours)
 - AUSP 7012 Measurement Techniques
 - AUSP 7101 Audiological Concepts
 - AUSP 7103 Differential Audiology I

- AUSP 7104 Clinical Practicum
- AUSP 7105 Differential Audiology II
- AUSP 7113 Rehabilitative Audiology and Hearing Conservation
- AUSP 7114 Introduction to Hearing Aids
- AUSP 7115 Pediatric Audiology
- AUSP 7116 Hearing Aid Selection
- AUSP 7127 Management of Individuals with Hearing Impairment
- AUSP 7990 Special Project Or
- AUSP 7996 Thesis

c. Supplemental Coursework (3 hours)

- AUSP 7500 Evaluating Research in Communication Disorders

d. Proficiency in Manual Communication

- AUSP 7123 Manual Communication

Speech Pathology

1. Basic Communication Processes (ASHA: 15 hours; the university: 9 hours - AUSP 7000, 7006, and 7007)

- AUSP 7000 Speech and Hearing Science
- AUSP 7002 Seminar in Sciences
- AUSP 7003 Anatomy and Physiology of the Speech Mechanism
- AUSP 7006 Language and Speech Development
- AUSP 7007 Communicative Interaction
- AUSP 7008 Acoustic and Physiologic Phonetics
- AUSP 7010 Neurological Bases of Communication
- AUSP 7011 Psycholinguistics
- AUSP 7016 Socio-cultural Bases of Communication
- AUSP 7017 Microcomputers in Speech and Hearing Science

2. Research Methods and Experience (6 hours)

- AUSP 7500 Evaluating Research in Communication Disorders
- AUSP 7990 Special Project

Or
AUSP 7996 Thesis

3. Speech Disorders (ASHA: 6 hours minimum)

- AUSP 7201 Cleft Palate and Craniofacial Disorders
- AUSP 7202 Motor Speech Disorders in Children
- AUSP 7203 Voice Disorders
- AUSP 7204 Phonological Disorders
- AUSP 7205 Stuttering
- AUSP 7206 Neuromotor Speech Disorders in Adults
- AUSP 7210 Seminar in Speech Pathology
- AUSP 7211 Clinical Experience for Public School Personnel
- AUSP 7309 Speech Rehabilitation for Head/Neck Pathologies

4. Language Disorders (ASHA: 6 hours minimum)

- AUSP 7300 Language Disorders in Children
- AUSP 7302 Language Disorders in Adults I
- AUSP 7303 Language Disorders in Adults II
- AUSP 7304 Seminar in Language Disorders
- AUSP 7305 Language Learning Disabilities
- AUSP 7306 Management Issues in Adult Neurogenic Disorders

5. Other Major Professional Coursework

- AUSP 7207 Clinical Instrumentation
- AUSP 7209 Dysphagia and Related Disorders
- AUSP 7210 Seminar in Speech Pathology
- AUSP 7308 Augmentative Communication
- AUSP 7403 Intervention with Parents and Families of the Communicatively Impaired
- AUSP 7123 Manual English I
- AUSP 7501 Phonetic Transcription
- AUSP 7502 Administrative Issues in Professional Practice

6. Audiology (6 hours)

- AUSP 7101 Audiological Concepts
- AUSP 7122 Aural Rehabilitation

7. Clinical Practicum (9-12 hours)

- AUSP 7200 Introduction to Clinical Practice in Speech-Language Pathology
- AUSP 7208 Clinical Experience in Speech and Language Disorders

II. Teacher Certification Requirements

School degree requirements meet all requirements for teacher certification.

V. Ph.D. Program

A. Program Admission.

All applications will be reviewed by the admissions committee. Students should have a GPA of 3.5 (on a 4 point scale). GRE scores are required (General Test). All doctoral students will be required to complete a data-based research project by the end of the summer semester of their first year.

Applicants are asked to submit completed recommendation forms and three letters of recommendation from individuals familiar with the applicant's academic background and aptitude for doctoral work in Audiology/Speech-Language Pathology. The letters should specify in detail the applicant's capabilities for doctoral study. Applicants also need to submit a resume/vita describing all educational and work experience and a letter describing research interests and professional goals. In addition, applicants must have an interview with U of M faculty in the student's major area of concentration.

Most applicants will have a Master's degree upon admission but this is not a requirement.

B. General Program Requirements.

1. Advisers. An academic adviser will be appointed in consultation with each student to take into account personal and professional goals. Upon admission each doctoral student will be assigned an adviser by the Coordinator of Graduate Studies in consultation with the student. This adviser will serve as the chair of the student's planning committee. The adviser shall be a member of the graduate faculty of The University of Memphis.
2. Planning Committee. The planning committee's charge is to evaluate the student's academic and clinical needs and assist in the planning of the doctoral student's academic program. The academic plan will be tailored to accommodate the individual student's academic interests, background, and professional goals. The committee will recommend to the Graduate School those courses, if any, to be transferred to apply toward the Ph.D., provided that the credit meets general university requirements. The committee, all of whom must be members of the graduate faculty, shall number no less than three, at least two of whom shall be from the student's area of concentration. The student, in conjunction with the committee, will develop a final academic plan to be in written form and filed in the dean's office. This plan is to be signed by each member of the committee and the doctoral student. The plan must be filed no later than the middle of the second semester. The student or a planning committee member may propose changes after the plan has been filed. However, any resulting change in the student's plan will require written approval of the committee and the doctoral student.

C. Areas of Concentration.

1. Audiology.

- a. Credit Hour Requirements. Requirements for the doctoral degree shall be no less than 90 semester hours beyond the bachelor's degree. Forty-five to fifty-four hours must be taken in the student's area of Audiology. At least 21 hours shall be taken in Audiology at The University of Memphis of which a maximum of nine hours of dissertation may be counted.

Students will be required to complete 15 to 24 semester hours of work in order to satisfy research tool requirements. Courses that may satisfy such requirements include those in statistics, research design, instrumentation, and computer programming. The area of concentration plus the research tools must total a minimum of 69 hours.

Twelve semester hours will be required from collateral areas. A collateral area is defined as a combination of courses based on substantive commonality that may involve work in more than one academic department. A minimum of two collateral areas must be represented in the student's academic plan. At least six semester hours of the student's collateral work must be taken in departments outside of Audiology and Speech Pathology. Semester hours applying to collateral areas that are taken in the School of Audiology and Speech-Language Pathology shall not be counted toward the hours contributing to the student's concentration area.

- b. Doctoral Experience Requirements. Doctoral students will be expected to either complete the requirements for the American Speech-Language-Hearing Association Certificate of Clinical Competence and complete an additional advanced training internship or the student will work in an active research laboratory with the help and advice of the laboratory director. In this case the student will produce a product that is submitted for publication or presentation at a national professional/scientific meeting. The doctoral experience requirement will be determined by the student's planning committee in conjunction with the student. All students will have a weekly 15 hour doctoral experience assignment in addition to academic coursework.
- c. Qualifying Committee. The qualifying committee will consist of members selected by the student in conjunction with the adviser. The committee will be made up of at least three members from the student's concentration area, one from a collateral area outside the School of Audiology and Speech-Language Pathology, and one from the area of statistics and research design.
- d. Qualifying Examination. The qualifying examination will consist of a written and oral examination. The written examination will entail 24 hours of writing, within a one-week period. The examination will cover the student's concentration area, statistics/research design, instrumentation, and at least one collateral area. The qualifying committee will determine the readiness of the student for the oral examination, the date of which shall be established within three weeks after the successful conclusion of the written examination. Prior to the oral examination, the student will meet with individual committee members concerning the nature of the oral examination. The oral examination will entail further coverage of the areas represented in the student's written examination.

The qualifying examination may be taken upon completion of the doctoral student's academic plan or within the last semester of completing his or her academic requirements. This examination will be administered any time within the specified semester subject to the discretion of the qualifying committee. The student's status relative to the qualifying examination shall be determined by the committee after the oral examination. This determination will be

based on a committee vote. No more than one dissenting vote may be cast for a student to pass. The committee has the authority to specify further stipulations aimed at remedying any deficiencies reflected in the student's qualifying examination. The committee chair shall file in the dean's office a decision in writing concerning the student's qualifying examination within two weeks after the oral examination.

- e. Candidacy. After completion of all academic requirements and successful completion of the qualifying examination, a doctoral student may apply for candidacy.
 - f. Dissertation Committee. The dissertation committee will consist of a minimum of four faculty members selected by the student in consultation with the dissertation advisor. At least two members must be from the student's area of concentration and at least one member must be from a department outside the School of Audiology and Speech-Language Pathology. The chair of the dissertation committee must be from the student's concentration area and must be a full member of the graduate faculty.
 - g. Dissertation. The student will develop a prospectus in conjunction with the dissertation committee chair. The prospectus will be reviewed for approval by the committee. The number of credits that will apply towards the degree will range from 6 to 9. This will be determined by the committee based on the scope of the prospectus. After approval the student will conduct the work set forth in the prospectus. The completed dissertation will be defended by the student. The oral defense will be open to the University community, with voting on the acceptability of the defense restricted to dissertation committee members. An announcement of the scheduled defense must be sent to the dean of the Graduate School one month prior to the scheduled date. An affirmative decision will be rendered if no dissenting vote from the committee is cast. After successful defense any required revision, retyping, and resubmission of the dissertation to the committee chair must be completed prior to the awarding of the degree.
2. Speech-Language Pathology.
 - a. Credit Hour Requirements. Requirements for the doctoral degree shall be no less than 90 semester hours beyond the bachelor's degree. At least 45 hours must be taken in the area of Speech-Language Pathology. At least 21 of those hours shall be taken in Speech-Language Pathology at the University of Memphis of which a maximum of nine hours of dissertation may be counted. Students will be required to complete 12 to 15 semester hours of work in order to satisfy research tool requirements. Courses that may satisfy such requirements include those in statistics, research design, instrumentation, and computer programming. Eighteen semester hours will be required from collateral areas. A collateral area is defined as a combination of courses based on substantive commonality that may involve work in more than one academic department. A minimum of two collateral areas must be represented in the student's academic plan. At least nine semester hours of the student's collateral work must be taken in departments outside of The School of Audiology and Speech-Language Pathology. Semester hours applying to collateral areas that are taken in the School of Audiology and Speech-Language Pathology shall not be counted toward the hours contributing to the student's concentration area.
 - b. Doctoral Experience Requirements. Speech-Language Pathology doctoral students are expected to demonstrate the skills necessary to complete successfully the degree requirements within the first two semesters of study. Students must receive no less than a "3.00" grade in all coursework. Students must also demonstrate proficiencies in the areas of research, instruction, and/or clinical service in their 16-20 weekly hours of assigned departmental responsibilities. Students performance will be evaluated by a departmental committee that will forward recommendations to the planning committee. The planning committee, in conjunction with the student, will make academic and clinical recommendations for the degree plan and subsequent doctoral experiences.
 - c. Qualifying Committee. The qualifying committee will consist of members selected by the student in conjunction with the adviser. The committee will be made up of at least three members from the School of Audiology and Speech-Language Pathology, one from a collateral area outside the School of Audiology and Speech-Language Pathology, and one from the area of statistics and research design.
 - d. Qualifying Examination. The qualifying examination will consist of a written and oral examination. The written examination will entail 24 hours of writing within a two-week period. The examination will cover the student's concentration area and both collateral areas. The student may be asked questions calling for direct application of statistics and research design. The qualifying committee will determine the readiness of the student for the oral examination, the date of which shall be established within three weeks after the successful conclusion of the written examination. Prior to the oral examination, the student will meet with individual committee members concerning the nature of the oral examination. The oral examination will entail further coverage of the areas represented in the student's written examination.

The qualifying examination may be taken upon completion of the doctoral student's academic plan or within the last semester of completing his or her academic requirements. This examination will be administered any time within the specified semester subject to the discretion of the qualifying committee. The student's status relative to the qualifying examination shall be determined by the committee after the oral examination. This determination will be based on a committee vote. No more than one dissenting vote may be cast for a student to pass. The committee has the authority to specify further stipulations aimed at remedying any deficiencies reflected in the student's qualifying examination. The committee chair shall file in the department chair's office a decision in writing concerning the student's qualifying examination within two weeks after the oral examination.

- e. Candidacy. After the completion of all academic requirements and successful completion of the qualifying examination, a doctoral student may apply for Candidacy.
- f. Dissertation Committee. The dissertation committee will consist of a minimum of four faculty members selected by the student in consultation with the dissertation advisor. At least two members must be from the School of Audiology and Speech-Language Pathology and at least one member must be from a department outside the School of Audiology and Speech-Language Pathology. The chair of the dissertation committee must be from the student's concentration area and must be a full member of the graduate faculty.
- g. Dissertation. The student will develop a prospectus in conjunction with the dissertation committee chair. The prospectus will be reviewed for approval by the committee. After approval the student will conduct the work set forth in the prospectus. The completed dissertation will be defended by the student. The oral defense will be open to the University community, with voting on the acceptability of the defense restricted to dissertation committee members. An announcement of the scheduled defense must be sent to the dean of the Graduate School one month prior to the date. An affirmative decision will be rendered if no dissenting vote from the committee is cast. After successful defense any required revision, retyping, and resubmission of the dissertation to the committee chair must be completed prior to the awarding of the degree.

AUDIOLOGY AND SPEECH PATHOLOGY (AUSP)

BASIC SCIENCE AREA

7000-8000. Speech Science. (3). Contemporary survey of phonetic sciences; detailed discussion of neurological, physiological, acoustic and perceptual processes involved in the production, transmission and intelligibility of the speech signal.

7001-8001. Hearing Science. (3). Basic acoustics, psychoacoustics and physiological acoustics.

7002-8002. Seminar in Communication Sciences. (3). Advanced study of selected aspects of basic sciences related to hearing, speech, and language; with different content, may be repeated for up to 6 hour credit at 7000 level or up to 12 hours at 8000 level. **PREREQUISITE:** Permission of instructor.

7003-8003. Anatomy and Physiology of the Speech Mechanism. (3) Structure and function of bodily organs related to the processes of speech production.

7004-8004. Anatomy and Physiology of the Hearing Mechanism. (3) Structure and function of outer, middle, inner ear, and auditory neural pathways; formation of auditory system in context of general prenatal development.

7006-8006. Language and Speech Development. (3). Normal acquisition and maintenance of speech and language, theoretical formulations about language and speech behavior, and approaches to its study. Students observe and describe the language of children of various ages whose development is within normal range.

7007-8007. Communicative Interaction. (3). Concepts and processes fundamental to communicative interaction. Emphasis on application of such concepts and processes to the student's own communicative interactions.

7008-8008. Acoustic and Physiological Phonetics. (3). Survey of experimental phonetics: acoustic theory and techniques of acoustic analysis; aerodynamics, kinematics, and physiology of speech production; speech synthesis and perception. **PREREQUISITE:** Permission of instructor.

7010-8010. Neurological Bases of Communication. (3). Review of the neuroanatomy of the central and peripheral nervous systems and the physiology of nerves and muscles. Attention on cortical and subcortical

al structures and on neuropsychological processes which are attributed to speech and/or language functions.

7011-8011. Psycholinguistics. (3). Historical and recent trends in linguistics; relationship between brain, language, and cognition; knowledge and processes involved in speaking and listening. Topics include nature of mental representations and organization of knowledge; speech perception; lexical, sentence, and discourse processing; speech and language production.

7012-8012. Measurement Techniques. (3). Principles and techniques involved in measurement procedures frequently encountered in the practice of Audiology. Major focus will be on the topics of calibration, measurement of environmental noise, and measurement of electroacoustic characteristics of hearing aids. Laboratory experience is provided. PREREQUISITES: 7001 and 7101 or permission of instructor.

7013-8013. Psychoacoustics. (3). Modern theoretical and applied research concerning the psychological responses to acoustic stimuli.

7016-8016. Socio-cultural Bases of Communication. (3). Influences of socio-cultural factors such as age, religion, ethnicity, socio-economic status and geographic region, on communication; emphasis on cross-cultural communication in educational and health-care settings.

7017-8017. Microcomputers in Speech and Hearing Science. (3). Number systems; programming concepts; interfacing components; analog-digital and digital-analog conversions; digital processing of speech and other signals; and computer hardware systems and peripherals with particular application in speech and hearing research. For doctoral and upper level master's students.

8015. Instrumentation. (3). The measurement and calibration of instrumentation typically used in speech and hearing science along with a discussion of pertinent electroacoustic principles.

AUDIOLOGY

7101-8101. Audiological Concepts. (3). Basic audiological concepts and their applicability to clinical procedures; topics include pure-tone air and bone conduction procedures, clinical masking, speech threshold and recognition testing, acoustic immittance, and acoustic reflex testing; laboratory exercises included.

7103-8103. Differential Audiology I. (3). Behavioral, acoustic, and electrophysiologic tests to identify site of lesion for given hearing loss; test strengths and weaknesses discussed along with concept of forming test battery for hearing assessment. PREREQUISITE: 7004, 7101, or permission of instructor. COREQUISITE: 7104.

7104-8104. Clinical Experience in Audiology. (3). Supervised clinical experience in the evaluation and/or management of clients with hearing impairments. Designed to meet student's individual needs.

7105-8105. Differential Audiology II. (3). Otoacoustic emissions and electronystagmography (ENG) technique and interpretation; cerumen management and review of otologic diseases and the aging auditory system. PREREQUISITE: 7103 or permission of instructor; COREQUISITE: 7104.

7112-8112. Seminar in Audiology. (3). Detailed study of selected topics in audiology. With different content, may be repeated for up to 2 hours at the 8000 level. PREREQUISITE: Permission.

7113-8113. Rehabilitative Audiology and Hearing Conservation. (3). Roles of auditory, visual, and bisensory cues in communication of hearing impaired children and adults; prosthetic devices; psychology of deafness and deaf culture; hearing conservation programs; classifications of auditory impairment, handicap, and disabilities; rehabilitative emphasis. PREREQUISITE: 7101 or permission of instructor.

7114-8114. Introduction to Hearing Aids. (3). Performance and measurement of wearable hearing aids; characteristics of hearing aids, standard and nonstandard hearing aid performance measurements, sound field acoustics, laboratory exercises. PREREQUISITE: 7101 or permission of instructor.

7115-8115. Pediatric Audiology. (3). Audiologic procedures in pediatric assessment; special test techniques for hospital and school settings including central auditory processing; hearing loss due to birth defects. PREREQUISITE: 7103 or permission of instructor.

7116-8116. Hearing Aid Selection. (3). Traditional and contemporary methods of hearing aid selection and evaluation; behavioral and

objective procedures for children and adults. Laboratory exercises required PREREQUISITE: 7114 or permission of instructor.

7117-8117. Individual Study in Audiology for Speech Pathologists. (3). Directed topics include physics of sound, hearing loss, basic audiometric testing and hearing conservation.

7122-8122. Aural Rehabilitation. (3). Introduction to rehabilitative procedures for hearing-impaired children and adults; topics include minimal hearing loss, auditory perception of speech, amplification, speech and language behaviors, psychosocial problems, educational deficits and management. (re)habilitation programs for children and adults, and cochlear implants. Primarily for non-audiology majors. PREREQUISITE: 7101 or permission of instructor.

7123-8123. Manual English. (1). Acquisition of basic vocabulary and understanding of rules of Signed English; sign continuum; situational usage of both American Sign Language and Manual English.

7127-8127. Management of Individuals with Hearing Impairment. (3). Study of auditory disability and handicap; in-depth interview technique and self-assessment instruments to assess communicative function and behavioral and psychosocial adjustment to hearing impairment; establishment and evaluation of rehabilitative programs; group and individual considerations and counseling for hearing impaired and family members. PREREQUISITE: 7101, 7104, or permission of instructor.

7700. Individual Readings in Audiology. (1-3). Directed independent study in literature in an area of audiology. May be repeated as often as desired.

7990. Special Projects. (3). Individual needs of students who wish to explore an area with faculty guidance. Students may pursue a pilot study. May be taken twice. PREREQUISITE: Permission of individual faculty members to be involved.

†7996. Thesis. (1-3). Academic credit for thesis may be taken for a maximum of 6 hours and a minimum of 3 hours degree credit. Only 3 credits may be applied toward degree requirements for the master's degree.

8100. Individual Readings in Audiology. (1-6). Directed independent study of literature in an area of audiology. May be repeated as often as desired.

8121. Individual Projects in Audiology. (1-6). Students pursue individual research projects under the direction of a member of the graduate faculty in audiology. May be repeated as often as desired.

8124. Clinical Supervision in Audiology. (1-3). Processes involved in supervision of student clinicians in diagnostic audiology and/or aural rehabilitation. Experience in supervision of M.A. Level student clinicians is provided.

8125. Clinical Internship in Audiology. (6). Minimum of 270 clock hours of supervised experience in clinical faculty encompassing administrative and patient management aspects of audiology. Written report required. PREREQUISITE: Certificate of clinical competence in Audiology; 48 hours toward the degree.

†9000. Dissertation. (1-6). Academic credit for dissertation may be taken for a maximum of 12 hours and a minimum of 1 hour credit. Only 9 credits may be applied toward degree requirements for the Ph.D. degree.

SPEECH AND LANGUAGE PATHOLOGY

7200. Introduction to Clinical Practice in Speech-Language Pathology. (2). Introduction to clinical practicum in speech and language disorders. For students without prior practical graduate experience in communication disorders. Normally taken concurrently with AUSP 7501

7201-8201. Cleft Palate and Craniofacial Disorders. (3). Cleft palate speech with emphasis on articulatory, resonance, and phonatory aspects as well as medical and habilitative and rehabilitative principles. PREREQUISITES: 7003 and 7200 or permission of instructor.

7202-8202. Motor Speech Disorders in Children. (3). Speech deficits attributable to developmental neuromuscular disorder; etiologies and classifications of cerebral palsy, hormonal disturbances, myopathologies, and various genetic disorders; review of contemporary approaches to diagnosis and management of developmental dysarthria and apraxia; special problems associated with treating profoundly- and multiply-handicapped child.

7203-8203. Voice Disorders. (3). In depth review of voice disorders by patterns of deviation, etiology, and techniques of intervention. Opportunity for original papers and/or projects.

7204-8204. Phonological Disorders. (3). Current research in phonology, including assessment, prediction, and remediation procedures.

7205-8205. Stuttering. (3). Review, evaluation, and synthesis of information regarding the definition of stuttering, theories of etiology, symptomatology, therapy approaches, and methods of research.

7206-8206. Neuromotor Speech Disorders in Adults. (3). Review of neuromotor systems subserving speech production and nature of neuromotor systems pathologies; diagnostic definitions and taxonomies associated with dysarthria and apraxia of speech, as well as applications of instrumental methods to clinical description of motor speech disorders; differential diagnosis, assessment, and interdisciplinary management of adults with acquired neuromotor disturbances affecting speech.

7207-8207. Clinical Instrumentation. (3). Principles and procedures for measurement of speech and voice function and dysfunction; standardization, validity, and reliability of instrumental procedures; hands-on experience with acquisition and interpretation of acoustic and physiologic data for speech pathologies.

7208-8208. Clinical Experience in Speech and Language Disorders. (3). Supervised clinical practice with clients. Designed to meet student's individual needs.

7209-8209. Dysphagia and Related Disorders. (3). Anatomy and physiology of normal deglutition; nature and characteristics of swallowing disorders; methods of evaluation and management of dysphagia in adults and children; and consideration of medical conditions such as aspiration pneumonia, tracheostomy, and other complicating factors associated with dysphagia.

7210-8210. Seminar in Speech Pathology. (3). Selected areas of speech or language disorders. With different content may be repeated for up to 6 hours at the 7000 level or for up to 12 hours at the 8000 level.

7211. Clinical Experience for Public School Personnel. (1-2). Supervised clinical experience designed to meet the needs of practicing public school personnel. PREREQUISITES: Permission of the Coordinator of Graduate Studies and completion of one semester of AUP 7208.

7300-8300. Language Disorders in Children. (3). Perceptual, social, and cognitive correlates of language disorders associated with specific language impairment, phonological disorders, mental retardation, autism, and hearing impairment; assessment, diagnosis, and treatment of language disorders in young children (0-6 years).

7302-8302. Language Disorders in Adults I. (3). Communicative and cognitive deficits associated with focal neurological disease; differential diagnosis, assessment, and management of adults with aphasia and right hemisphere communication disorders.

7303-8303. Language Disorders in Adults II. (3). Communicative and cognitive deficits associated with nonfocal neurological disease; differential diagnosis, assessment, and management of individuals with traumatic brain injury, dementia, and other disorders.

7304-8304. Seminar in Language Disorders. (3). Detailed study of selected topics in language disorders in children and adults. With different content, may be repeated for up to 12 hours at the 8000 level. PREREQUISITE: Permission of instructor.

7305-8305. Language Learning Disabilities. (3). Assessment and treatment of spoken and written language disorders in school-age children and adolescents with special emphasis on the collaborative role of the speech-language pathologist in school-based settings; attentional and social deficits associated with language-learning disabilities.

7307-8307. Management Issues in Adult Neurogenic Disorders. (3). Review of specific management approaches to adult neurogenic patients in variety of healthcare settings; professional issues relating to efficacy of treatment, third party reimbursement, and roles and responsibilities of other health care professionals. PREREQUISITE: 7302 and 7303 or permission of instructor.

7308-8308. Augmentative Communication (3). Comprehensive overview of theoretical and practical issues related to use of augmentative and alternative communication (AAC) systems; assessment and intervention strategies for children and adults in need of AAC.

7309-8309. Speech Rehabilitation for Head/Neck Pathologies. (3). Etiology, disordered anatomy, and physiology resulting from cancer of head and neck; ways in which cancer, surgery, and other medical treatments affect speech and voice functioning and swallowing; diagnostic and treatment approaches.

7403-8403. Intervention with Parents and Families of the Communicatively Impaired. (3). Review and discussion of literature regarding parents and families of persons with communication impairments. Supervised practicum experiences with such parents and other family members are required.

7500. Evaluating Research in Communication Disorders. (3). (7005). Introduction to research applicable to speech pathology and audiology and theories of measurement, including statistical and behavioral designs, reliability and judgements, and replicability.

7501. Phonetic Transcription. (1). Broad and narrow transcription techniques and opportunities for transcription practice with normal and disordered populations.

7502-8502. Administrative Issues in Professional Practice. (3). Consideration of legal, ethical, financial, and personnel management issues associated with administration of clinical programs in Speech and Hearing. Special emphasis given to private practice setting. Students required to complete project.

7800. Individual Readings in Speech Pathology. (1-3). Directed independent study of literature in an area of speech pathology. May be repeated as often as desired.

7990. Special Projects. (1-3). Students study a specific area under faculty guidance. May be taken twice. PREREQUISITE: Permission of individual faculty members to be involved.

†7996. Thesis. (1-3). Academic credit for thesis may be taken for a maximum of 6 hours and a minimum of 3 hours credit. Only 3 hours of credit may be applied toward degree requirements for the master's degree.

8200. Individual Readings in Speech Pathology. (1-6). Directed independent study of literature in an area of speech pathology. May be repeated as often as desired.

8221. Individual Projects in Speech Pathology. (1-6). Students pursue individual research projects under the direction of a member of the graduate faculty in speech pathology. May be repeated as often as desired.

8228. Clinical Supervision in Speech Language Pathology. (1). Processes involved in supervision of study clinicians in speech and language assessment and therapy. Experiences in supervision of M.A. Level student clinicians provided.

†9000 Dissertation. (1-12). Academic credit for dissertation may be taken for a maximum of 12 hours and a minimum of 1 hours credit. Only 9 hours may be applied toward degree requirements for the Ph.D. degree.

†Grades of S, U, or IP will be given.

University College

H. RAMSEY FOWLER, Ph. D., *Dean*
Room G1, Johnson Hall
(901) 678-2716

WILLIAM E. "JACK" CARPENTER, Ph.D.
Coordinator, MALS Program
(901) 678-2326

E-mail: hfowler@cc.memphis.edu
www.people.memphis.edu/~univcol/mals.html

The University College offers the Master of Arts in Liberal Studies (MALS) with a major in interdisciplinary studies.

I. MALS Degree Program

The MALS is interdisciplinary in nature, permitting students to elect courses from departments that offer the Master of Arts degree and, from the professional colleges, courses that are liberal in content.

Program Admission and Prerequisites

Applicants to the program are evaluated as they apply and may be admitted for the fall or spring semesters or for the summer semester. All applicants must meet the following admission requirements:

1. Admission to the Graduate School.
2. Completion of MALS admission form.
3. Personal interview with the MALS program director.
4. An essay of approximately five double-spaced, typewritten pages, detailing personal and academic goals to be satisfied by the MALS program and suggesting curriculum to be designed to meet these goals.
5. Two letters of recommendation.

Program Requirements

1. Acceptance by the MALS program director of a MALS Contract.
2. Completion of program core: UNIV 7000, 7100, 7200, 7996.
3. Completion of 21 semester hours of approved graduate courses taken from at least two different departments, no more than 9 semester hours of which can be at the 6000-level. No more than 12 semester hours of courses can come from a single department.
4. No more than nine semester hours of transfer credit.
5. Successful completion of UNIV 7996 Special Project, followed by an oral presentation and defense.
6. Successful completion of an oral or written comprehensive examination.

UNIVERSITY COLLEGE (UNIV)

100. Research in Liberal Studies. (3). Methods of inquiry and research appropriate to graduate liberal studies. **PREREQUISITE:** Approval of MALS major advisor and MALS program director.

200. Liberal Studies Seminar. (3). Interdisciplinary examination of major issue, historical period, theme. Subject matter will change from semester to semester. **PREREQUISITE:** Admission to MALS program or permission of instructor and MALS program director.

796. Independent Study. (3). Research into interdisciplinary area of study supportive of individualized MALS program. May be repeated once. **PREREQUISITE:** Approval of MALS out-of-class learning contract by instructor of record, students major advisor, and MALS program director.

996. Special Project. (3). Supervised research based upon knowledge and skills learned in MALS program. Creative or performance component acceptable. **PREREQUISITE:** Successful completion of UNIV 100; approval of MALS special contract by major advisor and MALS program director.

JUDAIC STUDIES (JDST)

440. Israel: Antiquity in Modernity. (3). (Same as ANTH 6840). Interdisciplinary examination of relationship between ancient traditions and modern issues in Israel. Emphasis on relationship between historical conditions, conflicts, and interconnections and new choices facing Israel.

441. Biblical Archaeology. (3). (Same as ANTH 6841). Relationship between historical texts in Hebrew Bible and historical evidence from archaeological research in Israel and surrounding area. Emphasis on how archaeological evidence and Biblical narratives illuminate each other.

Loewenberg School of Nursing

TONI BARGAGLIOTTI, D.N.Sc., *Dean*

MEMBERS

MARGARET AIKEN, *Professor*

Ph.D. (1991), University of Mississippi [2000]

JANET C. SCHERUBEL, *Professor*

Ph.D. (1985), University of Illinois, Chicago [2001]

ASSOCIATE MEMBER

MARJORIE F. LUTTRELL, *Associate Professor*

Ph.D. (1986), University of Texas-Austin [2000]

University Libraries

LESTER J. POURCIAU, JR., *Director*

ASSOCIATE MEMBER

JOHN E. EVANS

Ed.D. (1989), Memphis State University [2000]

University Administration

V. LANE RAWLINS, Ph.D., *President*

J. IVAN LEGG, Ph.D., *Provost*

LINDA L. BRINKLEY, Ph.D., *Vice Provost for Research and Dean of the Graduate School*

University Council for Graduate Studies and Research

- LINDA BENNETT, *Associate Dean for Graduate Studies and Research, College of Arts and Sciences*
 WILLIAM S. JANNA, *Associate Dean, Director of Graduate Studies, Herff College of Engineering*
 CRAIG LANGSTRAAT, *Associate Dean for Academic Programs, Fogelman College of Business and Economics*
 DAN LATTIMORE, *Associate Dean, Director of Graduate Programs, College of Communication and Fine Arts*
 DAVID J. WARK, *Director of Graduate Studies, School of Audiology and Speech-Language Pathology*
 KAREN WEDDLE-WEST, *Assistant Dean for Graduate Studies, College of Education*
 DAVID APPLEBY, *Communication (1999)**
 TOM BUGGEY, *Instruction and Curriculum Leadership (2000)*
 MICHAEL DALEY, *Electrical Engineering (1999)*
 KENNETH DAVIS, *Biology (2000)*
 ELINOR GRUSIN, *Journalism (2000)*
 RICHARD JANIKOWSKI, *Criminology & Criminal Justice (1999)*
 GLADIUS LEWIS, *Mechanical Engineering (1999)*
 ERNEST RAKOW, *Counseling, Educational Psychology & Research, (2000)*
 DANIEL SHERRELL, *College of Business & Economics (1999)*
 WILLIAM SMITH, *College of Business & Economics (2000)*
 DAVID TUCKER, *History (2000)*
 LINDA L. BRINKLEY, *Vice Provost for Research and Dean of the Graduate School—ex officio*
 DIANNE D. HORGAN, *Associate Dean of the Graduate School—ex officio*
 ANN WILKS-PENROD, *Assistant Vice Provost for Research and the Graduate School—ex officio*

*Date of Expiration of Appointment

The Tennessee Board of Regents

- THE HONORABLE DON SUNDQUIST, *Governor of Tennessee*
 THE HONORABLE DEMETRA GODSEY BOYD, *Clarksville*
 THE HONORABLE ROBERT "JACK" FISHMAN, *Morristown*
 THE HONORABLE ROBERT L. GAMBLE, *Chattanooga*
 THE HONORABLE CLIFFORD "BO" H. HENRY, *Maryville*
 THE HONORABLE DOUGLAS W. HODGE, *Dyersburg*
 THE HONORABLE ED JERNIGAN, *Nashville*

- THE HONORABLE JANE G. KISBER, *Jackson*
 THE HONORABLE W. KEITH MCCORD, *Knoxville*
 THE HONORABLE LESLIE PARKS POPE, *Gray*
 THE HONORABLE RICHARD RHODA, *Executive Director, Tennessee Higher Education Commission*
 THE HONORABLE J. STANLEY ROGERS, *Manchester*
 THE HONORABLE DEBORA S. SEIVERS, *Columbia*
 THE HONORABLE MAXINE A. SMITH, *Memphis*
 THE HONORABLE JANE WALTERS, *Commissioner of Education*
 THE HONORABLE NANCY WASHINGTON, *Clarksville*
 THE HONORABLE WILLIAM U. WATKINS, JR., *Memphis*
 THE HONORABLE DAN WHEELER, *Commissioner of Agriculture*

President's Office

- V. LANE RAWLINS, Ph.D., *President*
 O'NEAL SMITHERMAN, Ph.D., *Executive Assistant to President—Planning and Projects*
 DORIS R. KIRBY, J.D., *Executive Assistant to President, Legal and Internal Affairs*
 RITA R. RICHARDSON, B.B.A., *Director of Internal Audit*
 LINDA BRADLEY-WAYNICK, *Assistant to President—Administration*
 MARK STANSBURY, *Assistant to President*

Office of The Provost

- J. IVAN LEGG, Ph.D., *Provost*
 DONALD K. CARSON, Ph.D., *Vice Provost for Enrollment Services and Vice President for Student Affairs*
 LINDA L. BRINKLEY, Ph.D., *Vice Provost for Research and Dean of the Graduate School*
 DONNA RANDALL, Ph.D., *Interim Senior Vice Provost for Academic Affairs*
 DAN LATTIMORE, Ph.D., *Interim Vice Provost for Extended Programs*
 BLAINE A. BROWNELL, Ph.D., *Executive Director, Center for International Programs and Services*
 DANIEL J. POJE, Ed.D., *Director of Academic Programs and Assessment*
 JERRIE SCOTT, Ph.D., *Director of Diversity*
 LESTER J. POURCIAU, JR., Ph.D., *Director of Libraries*
 TONI BARGAGLIOTTI, D.N.Sc., *Dean, Loewenberg School of Nursing*
 NATHAN L. ESSEX, Ph.D., *Dean of The College of Education*
 RALPH J. FAUDREE, JR., Ph.D., *Dean of The College of Arts and Sciences*

AMSEY FOWLER, Ph.D., *Dean of The University College*
 LAURICE I. MENDEL, Ph.D., *Dean, School of Audiology and
 Speech-Language Pathology*
 ICHARD R. RANTA, Ph.D., *Dean of The College of
 Communication and Fine Arts*
 DONALD J. POLDEN, J.D., *Dean of the Cecil C. Humphreys
 School of Law*
 ICHARD C. WARDER, JR., Ph.D., *Dean of The Herff College
 of Engineering*
 JAMES WETHERBE, Ph.D., *Interim Dean of the Fogelman
 College of Business and Economics*

Student Affairs and Enrollment Services

DONALD K. CARSON, Ph.D., *Vice President for Student
 Affairs and Vice Provost for Enrollment Services*
 OSIE B. BINGHAM, Ph.D., *Assistant Vice President for
 Student Development*
 ONNIE N. SUTTON, Ed.D., *Assistant Vice Provost for
 Enrollment Services*
 WILLIAM L. AKEY, Ed.S., *Director of Student Relations and
 Orientation Services*
 JAY ANDERSEN, M.S., *Director of University Center*
 ANIEL D. ARMITAGE, M.S., *Director of Residence Life*
 HUCK BOUDREAU, Ph.D., *Director, Student Financial Aid*
 EVIN CARREATHERS, M.A., *Associate Dean of Students,
 Minority Affairs*
 NDA F. CLARK, M.A., *Director of Adult Student
 Development*
 AM A. COGDAL, Ph.D., *Director of the Center for Student
 Development*
 THELREDA COLLINS, M.D., *Director, Student Health
 Services*
 ARION F. EMSLIE, Ed.D., *Executive Assistant to the Vice
 President for Students Affairs*
 AVID G. GRAHAM, M.A., *Director, Career and Employment
 Services*
 ETA C. LAABS, M.B.A., *Assistant to the Vice President for
 Student Affairs and Vice Provost for Enrollment Services*
 ARREN RICHEY, B.A., *Interim Director, Student Leadership*
 OEL A. SCHWARTZ, M.S., *Registrar*
 ONA S. SPARGER, M.A., *Director of Student Disability
 Services*
 ATHRYN E. STORY, J.D., *Assistant Dean of Student Judicial
 Affairs*
 JTEE SUJITPARAPITAYA, M.S., M.B.A., *Director, Office of
 Systems Administration*
 MOTHY L. SUMNER, Ed.D., *Director of the Center for
 Athletic Academic Services*
 A A. VEST, M.Ed., *Director of Campus Recreation and
 Intramural Services*
 AVID R. WALLACE, M.S., *Director of Admissions*

Business and Finance

EUGENE SMITH, Ph.D., *Vice President for Business and
 Finance*
 YMOND PIPKIN, M.A., C.P.A., *Associate Vice President
 for Finance*

JOSEPH T. BOND II, B.B.A., C.P.M., *Director of Purchasing*
 JOHN W. COTHERN, J.D., *Assistant Vice President for
 Administration*
 ROGER FOWLER, M.Ed., *Director of Public Safety*
 JAMES E. HELLUMS, M.S., M.B.A., P.E., *Assistant Vice
 President for Physical Plant and Planning*
 PHILIP A. POTEET, M.C.R.P., *Assistant Vice President for
 Campus Planning and Design*
 TANYA GROVES, M.A., *Assistant to the Vice President*
 MARY ANN CAMP, B.B.A., *Assistant Vice President for
 Human Resources*
 MICHELLE R. BANKS, M.F.A., *Equal Employment/
 Affirmative Action Compliance Officer*

Information Systems

JAMES I. PENROD, Ed.D., *Vice President for Information
 Systems & CIO*
 ANN F. HARBOR, M.S., *Director of Strategic Planning and
 Administration*
 DONALD E. HARRIS, Ph.D., *Associate Vice President*
 ROBERT GATLIN, B.S., *Director of Tactical Planning and
 Project Management*
 THOMAS J. BARTON, Ph.D., *Director of IS Infrastructure*
 MARK L. REAVIS, *Manager—Telecommunications*
 EDWIN KOSHLAND, M.S., *Interim Director of Operations*
 SAJJAD MAHMOOD, M.S., *Manager—Computer Systems
 Support*
 BLAKE BURR-MCNEAL, M.S.A., *Training Coordinator*
 FAROKH ESLAHI, M.S., *Manager—User Services*
 GEORGE E. RELYEA, M.A., *Manager—Academic Systems*
 RALPH M. KOROLY, B.S.E., *Database Administrator*
 KIM N. WELCH, M.A., *Web Coordinator*

Marketing and Advancement

KEVIN F. ROPER, M.A., *Vice President for Marketing and
 Advancement*
 DANIEL THIEL, B.A., *Associate Vice President for
 Development and Alumni Affairs*
 CURT GUENTHER, M.A., *Interim Director—Public Relations*
 RONALD S. ALFORD, M.Ed., *Publications Director*
 RORIE TRAMMEL, M.S., *Managing Director of Advancement
 Services*
 LINDA MICHAEL, B.A., *Director of Special Events and
 Projects*

Research and the Graduate School

LINDA L. BRINKLEY, Ph.D., *Vice Provost for Research and
 Dean of the Graduate School*
 DIANNE D. HORGAN, Ph.D., *Associate Dean of the Graduate
 School*
 ANN W. WILKS-PENROD, Ed.D., *Assistant Vice Provost for
 Research and the Graduate School*
 PEGGY M. VANCO, M.Ed., *Director of Research Support
 Services*

Centers and Institutes

CALVIN H. ALLEN, Ph.D., *Director, College of Arts & Sciences Interdisciplinary Studies Center*

JERRY L. ANDERSON, Ph.D., *Director, Groundwater Institute*

LORELEI CORCORAN, Ph.D., *Director, Institute of Egyptian Art and Archaeology*

LEWIS B. COONS, Ph.D., *Director, Integrated Microscopy Center*

CHARLES CRAWFORD, Ph.D., *Director, Oral History*

ARCH JOHNSTON, Ph.D., *Executive Director, Center for Earthquake Research and Information*

JOHN GNUSCHKE, Ph.D., *Director, Center for Manpower Studies; Bureau of Business and Economic Research*

ARTHUR C. GRAESSER, Ph.D., *Director, Center for Applied Psychological Research; Director, Institute for Intelligent Systems*

DAVID COX, Ph.D., and STANLEY HYLAND, Ph.D., *Co-Directors, Center for Urban Research and Extension*

BENWARI L. KEDIA, Ph.D., *Director, Wang Center for International Business*

MICHAEL L. KENNEDY, Ph.D., *Director, Edward J. Meeman Biological Field Station*

ROBERT C. KLESGES, Ph.D., *Director, Prevention Center*

MARTIN E. LIPINSKI, Ph.D., *Director, Transportation Studies Institute; Director, Center for River Studies*

CHARLES J. LONG, Ph.D., *Director, U of M-UT Center for Neuropsychology*

MAURICE I. MENDEL, Ph.D., *Director, Memphis Speech and Hearing Center*

PATRICIA H. MURRELL, Ed.D., *Director, Center for the Study of Higher Education*

E. EUGENE PEARSON, JR., M.U.R., *Director, Regional Economic Development Center*

THOMAS A. RAKES, Ph.D., *Director, Research and Development for College of Education*

BARBARA ELLEN SMITH, Ph.D., *Director, Center for Research on Women*

JENNIFER WAGNER-LAWLOR, Ph.D., *Director, Marcus W. Orr Center for the Humanities*

Index

Academic calendar, 4
 Academic Common Market, 11, 26
 Academic Misconduct, 17-18
 Academic probation, 18
 Academic programs, 6, 20
 Academic Regulations, 16-20
 Academic Services, 10-12
 ACCOUNTANCY Area, 85
 Active student status:
 master's thesis, 21
 doctoral dissertation, 23
 Activity fee, 25
 Adding courses, 16
 Administrative officers, 172; directory, inside front cover
 ADMISSION:
 Education Specialist, 13-14, 22
 general policy, 13
 international students, 14-15
 master's programs, 13
 doctoral programs, 14
 conditional, 14
 non-degree, 15
 readmission, 14
 Advisory Committee, Doctoral, 22. See also program descriptions.
 Air Force ROTC, 15
 ANTHROPOLOGY, Department of, 31
 Appeals:
 grade, 18-19
 fees and refunds, 25-26
 residency classification, 28
 retention, 19-20
 APPLICATION:
 fee, 13, 14, 25
 policy and procedure, 13-15
 Applied music fee, 25
 Army ROTC, 15
 ART, Department of, 99
 ARTS AND SCIENCES, College of, 30
 Assistantships, 23-24
 Attendance, 16
 AUDIOLOGY AND SPEECH-LANGUAGE PATHOLOGY, School
 of, 166
 Audit courses, 16; fees, 26
 Automobile registration, 27-28

 BIOLOGY, Department of, 34
 BIOMEDICAL ENGINEERING, Department of, 152
 Bureau of Business and Economic Research, 8
 Bureau of Educational Research, 8
 BUSINESS ADMINISTRATION, 87
 BUSINESS & ECONOMICS, Fogelman College of, 81

 Calendar, academic: 1999-2000, 4; 2000-01, 5
 Candidacy, admission to:
 master's, 21
 doctoral, 23
 Catalog, expiration date, 20
 Center for Earthquake Research and Information, 8
 Center for the Humanities, 9
 Center for Research in Educational Policy, 8
 Center for Research on Women, 9
 Center for Study of Higher Education, 9
 Centers of Excellence, 10
 Chairs of Excellence, 10
 Change of: course, 16; grade, 17; major, 16
 Checks, returned, 26
 CHEMISTRY, Department of, 37
 CIVIL ENGINEERING, Department of, 155
 COLLEGES:
 Arts and Sciences, 30
 Business and Economics, 81

Communication and Fine Arts, 99
 Education, 119
 Engineering, 150
 Combination senior, 15
 COMMUNICATION, Department of, 103
 COMMUNICATION AND FINE ARTS, College of, 99
 Comprehensive examinations:
 master's, 21
 doctoral, 22
 Computer facilities, 7-8
 Conditional Admission, 14
 CONSUMER SCIENCE AND EDUCATION, Department of, 124
 Continuous enrollment:
 Master's, 21
 Doctoral, 23
 COUNSELING, EDUCATIONAL PSYCHOLOGY AND
 RESEARCH, Department of, 127
 Course load, 16
 COURSES:
 adding and dropping, 16
 auditing, 16
 descriptions (see Chapter 4)
 level requirement, 16
 load limitation, 16
 numbering, explanation of, 16
 validation, 17
 Credit by Examination, 17; fee, 28
 Credit earned at another institution (transfer), 17
 CRIMINOLOGY AND CRIMINAL JUSTICE, Department of, 40

D
 DEADLINES:
 application, domestic, 13
 application, international, 14
 residence hall contracts, 27
 refund of fees, 26
 submission of thesis/dissertation, 4
 See also specific college/department.
 Debts to the University, 26
 DECISION SCIENCES Area, 88
 Disability: registration for courses, 26
 Dissertation: fee, 28; requirements, 22-23
 DNA Laboratory, 9
 Doctoral admissions, 14; also see specific college/department.
 Doctoral assistantships and fellowships, 23-24
 DOCTORAL DEGREES:
 Doctor of Business Administration, 84-85
 Doctor of Education, 122, 129, 139, 147
 Doctor of Musical Arts, 110-111
 Doctor of Philosophy. See specific college/department
 Doctoral status, 22-23
 Dormitories and other housing, 26-27
 Dropping courses, 16; refund of fee, 26

E
 Ecological Research Center, 9
 ECONOMICS Area, 89
 EDUCATION, College of, 119
 Education Specialist degree, 13-14, 22, 122, 123
 ELECTRICAL ENGINEERING, Department of, 157
 ENGINEERING, Herff College of, 150
 ENGINEERING TECHNOLOGY, Department of, 160
 ENGLISH, Department of, 41
 Entrance examinations:
 Graduate Management Admissions Test, 15
 Graduate Record Examination, 15
 Miller Analogies Test, 15
 Test of English as a Foreign Language, 14
 Evaluation Services, 10
 Expiration of Catalog, 20

F
 Federal aid, 24
 Fees, 25-26; refunds, 26; miscellaneous, 27-28

Fellowships, 23-24
 FINANCE Area, 91
 Fogelman Executive Center, 9
 Foreign Language Proficiency, 20
 FOREIGN LANGUAGES AND LITERATURES, Department of, 45
 Foreign Languages Test, 14, 20
 Foreign students, admission, 14-15

G

GEOGRAPHY AND PLANNING, Department of, 48
 GEOLOGICAL SCIENCES, Department of, 51
 Governing body, 7
 Grade appeals, 18-19
 Grading system, 16-17
 Graduate assistantships, 23; also see specific college/department.
 Graduate faculty, 18
 Graduate non-degree student, 15
 Graduate School Administration, 172
 Graduate Student Association, 24

H

Handicapped Students. See Disabilities.
 Health Administration, Master of, 70
 Health Services, 15
 HUMAN MOVEMENT SCIENCES AND EDUCATION,
 Department of, 134
 HISTORY, Department of, 53
 History of the University, 7
 Housing: dormitory, 26-27; family student, 27

I-J

In Progress grade, 16
 Incomplete, explanation of grade, 16
 Identification cards, 28
 INDUSTRIAL AND SYSTEMS ENGINEERING, 162
 Information Technology, 7-8
 International Students Office, 11
 Institute of Egyptian Art and Archaeology, 9
 Institute for Intelligent Systems, 9
 INSTRUCTION AND CURRICULUM LEADERSHIP, Department
 of, 138
 INSURANCE, REAL ESTATE, AND BUSINESS LEGAL STUDIES
 Area, 93
 Intent to graduate, 4
 Integrated Microscopy Center, 9
 Jackson Graduate Center, 12
 JOURNALISM, Department of, 107

L

Late registration fee, 25
 Law, Cecil C. Humphreys School of, 12
 LEADERSHIP, Department of, 146
 Library Facilities, 7
 Licensure (teacher), 111, 121

M

Maintenance fee, 25
 MANAGEMENT Area, 93
 MANAGEMENT INFORMATION SYSTEMS Area, 95
 Marcus W. Orr Center for the Humanities, 9
 MARKETING Area, 97
 MARKETING EDUCATION, 127
 Married student housing, 27

MASTER'S DEGREES:

Master of Arts. See colleges and departments.
 Master of Arts in Teaching, 120
 Master of Arts in Liberal Studies, 171
 Master of Business Administration, 81-83; fees 25
 Master of City and Regional Planning, 50
 Master of Fine Arts, 44-45, 100-101, 116
 Master of Health Administration, 70
 Master of Music, 109-110
 Master of Public Administration, 69-70
 Master of Science. See colleges and departments.
 Master's degree: minimum requirements, 20-22; second, 22
 MATHEMATICAL SCIENCES, Department of, 56
 Meals, 28

MECHANICAL ENGINEERING, Department of, 163
 Meeman Biological Station, 9
 Memphis Community, 7
 MICROBIOLOGY AND MOLECULAR CELL SCIENCES,
 Department of, 63
 Minority Affairs, 10
 Misconduct, 17-18
 Mission of the University, 6
 MUSIC, Department of, 108
 Music fees, 25
 Music locker deposit, 28

O-P

Oak Ridge Associated Universities, 11
 Organization of the University, 7
 Payment of fees and debts, 26
 PHILOSOPHY, Department of, 65
 PHYSICS, Department of, 67
 Planning, Division of, 50
 POLITICAL SCIENCE, Department of, 69
 Privacy Rights, 18
 Probation, 18
 Problems courses, limitations on credit, 20
 Psychological Services Center, 11
 PSYCHOLOGY, Department of, 73
 Public Administration, Master of, 69-70

Q-R

Qualifying examination, 22
 Readmission, 14
 Refund of fees, 26
 Regional Economic Development Center, 10
 Regulations, academic, 16-20
 Rent: dormitory room, 26-27, refund, 27
 REQUIREMENTS:
 minimum graduate school, master's, 20-22; minimum graduate
 school, doctoral, 22-23.
 See individual departments and colleges for specific degree
 requirements.
 Research facilities, 7-10
 Research credit limitation, 23
 Research requirements (doctoral), 22-23
 Residence halls, 26-27
 Residence requirements for graduation, 22. See colleges/
 departments for specific requirements.
 Residency classification for fee payment, 15, 28-29
 Retention appeals, 19-20
 Returned checks, 26
 ROTC Programs, 15

S

Second Master's degree, 22
 Senior citizens, registration, 26
 SOCIOLOGY AND SOCIAL WORK, Department of, 79
 Speech and Hearing Center, 10
 Student Disability Services, 11
 Student housing, 26
 Summer Session:
 calendar, 4, 5
 course load, 16
 fees, 26

T-V

Teacher Licensure, 111, 121
 Technology. See Engineering Technology.
 THEATRE AND DANCE, Department of, 116
 Thesis, 21; fee, 28
 Time limitation, master's, 21; doctoral, 22; Catalog, 20
 Transfer credit, 17
 Tuition, 25
 UNIVERSITY COLLEGE, 171
 Validating old courses, 17, 28
 Values of the University, 6
 Veterans Services, 15

W

Withdrawal from the University, 16; refund of fees, 26
 Workload permitted, 16

- ART MUSEUM 11
Bookstore 44
Cafeteria/Tiger Den 35
Continuing Education 31
Egyptian Institute 11
Financial Aid 28
Fogelman Executive Center 13
Harris Auditorium 9

- Housing Office 31
Human Resources 34
Parking Office 74
Post Office 34
Public Safety 36
Purchasing 56
Tennis Courts 30, 72
Theatre 8
- Ticket Offices:**
Athletic 48
Other Events 44
Visitor Information Center 22

- Visual Information Center **27**





The University of Memphis

Periodical Postage
PAID
Memphis, Tennessee

1 9 9 9 2 0 0 1

Bulletin of The University of Memphis Memphis, Tennessee 38152
forwarding and return address guaranteed address correction requested
price \$5.00